SLADE NWR - NARRATIVE REPORT - 1968
FLORENCE LAKE NWR
LONG LAKE NWR

SLADE NATIONAL WILDLIFE REFUGE
Appert Lake Easement Refuge
Canfield Lake Easement Refuge
Flickertail Easement Refuge
Hutchinson Easement Refuge
Lake George Easement Refuge
Lost Lake Easement Refuge
Springwater Lake Easement Refuge
Sunburst Lake Easement Refuge
LONG LAKE NATIONAL WILDLIFE REFUGE *
FLORENCE LAKE NATIONAL WILDLIFE REFUGE *

NARRATIVE REPORT

1968

PERMANENT PERSONNEL

Marvin Mansfield	-	Refuge Manager
Karl L. Hansen	-	Assistant Refuge Manager (Transferred to Upper Miss. River Refuge 11/18)
Gerald D. Olson	-	Clerk (Typing)
Theodore Schauer	-	Laborer Maintenanceman

TEMPORARY EMPLOYEES

Alvin L. Hottman	-	Laborer (4/8 - 11/30)
Douglas Moffit	-	Laborer (3/25 - 11/30)
Harry Feist	-	Laborer (4/22 - 10/18)
Gregory S. Ericks	-	Bio. Aid (6/18 - 8/28)

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NARRATIVE REPORT

SLADE NATIONAL WILDLIFE REFUGE

DAWSON, NORTH DAKOTA

CALENDAR YEAR 1968

I. GENERAL

A. Weather Conditions.

	Snowfall	Precipitation This Month	Precipitation Normal*		Max. Temp.	Min. Temp.
January	8.5	.36	.45		45	-38
February	4.5	.18	.36		44	-20
March	7.0	1.76	.57		68	- 3
April	8.5	2.31	1.23		87	17
May	4.0	2.67	2.43		85	24
June		6.05	3.77		97	39
July		.78	2.60		94	42
August		1.81	2.08		90	34
September		3.11	1.55		83	33
October		.05	1.17		78	19
November	4.0	.39	.56		57	5
December	19.0	.84	.33		50	-30
Totals	55.5	20.31	17.10	Ext.	97	-38

*Based on years 1931 - 1960.

The above weather data was obtained from the records of the official U. S. Weather Bureau Station located eight miles west of the refuge in Steele.

Unofficial records kept at refuge headquarters show the refuge actually received much less snow and total precipitation than at Steele. Refuge snowfall is estimated at 35" and total precipitation at 17".

There was about 12" of snow on the ground at the beginning of the year, but temperatures near 40° in January and February reduced this to about 3" by the end of February. An unusually warm spell from March 3-7 melted the remaining snow except for a small amount in drifts.

The last spring snow fell on May 18 when a trace was recorded. The first fall snow was a trace on October 27. This was followed by many days of light snowfall in November and December which accumulated to 6" by the end of the year.

The extreme cold of early January ended on the 10th when the mercury climbed to 24°. The rest of the winter this area basked in above normal temperatures. March was unusually warm with five days having highs over 60°, and only one day below zero.

The last killing frost in the spring was recorded on May 21, while the first killing frost in the fall occurred October 3.

A low of 34° was recorded in Steele on August 14, but there was frost in the low places in this area. The frost damaged the corn but did not kill it.

The summer months were cool with only five days above 90°. Total precipitation for these months was near normal, however June was well above and July well below normal.

No serious storms occurred, and overall 1968 was a good year weather-wise.

B. Habitat Conditions.

1. Water.

Spring water conditions were fair to good in spite of a poor runoff. Heavy rains in June actually resulted in water areas being in better condition than in April-May. Because of the June moisture and cool weather, water areas remained in fair to good condition all summer. At freeze-up all water areas were higher than a year ago as can be seen in Table Number 1.

TABLE NUMBER 1

MSL Elevation*

Slade Refuge Pools

	January		December		Maximum	
	1968	1967	1968	1967	1968	1967
Harker Lake	31.21	32.27	31.57	31.21	32.32	32.88
Upper Harker	31.00	31.76	31.90	31.00	32.63	32.65
South Marsh	32.38	32.73	32.49	32.38	34.09	34.36
NW Slough	20.99	21.69	22.17	20.99	23.24	22.79
Hdqtrs. Lake	25.81	26.82	27.61	25.81	28.05	27.79
SE Slough	33.98	34.52	34.86	33.98	36.16	36.48

*Add 1700 to above figures to get actual elevation above sea level.

As in 1967 no water was allowed to flow into Harker Lake through the culvert. This resulted in elevations which were about right for waterfowl.

With the Harker Lake culverts closed, the excess water passed into South Marsh and then Lake Isabel. South Marsh was again very attractive to waterfowl pairs and received heavy use.

For the first time in several years some of the small potholes held water all year. This should make it easier for them to be filled in the spring.

2. Food and Cover.

South Marsh continues to provide the best food and cover for waterfowl. The marsh contains a good mixture of submerged aquatics, hardstem bulrush, phragmites, cattail, open water, and loafing sites. The east portion continues to receive heavy use from divers, especially in the fall.

The overall production of food and cover was good, and much better than the drought year of 1967. The corn yield was only fair but it has been heavily utilized by deer, raccoon, sharp-tailed grouse, pheasants, and mallards. At the end of the year the corn was all gone in A-5, 4-H Camp, and the Northwest Slough shelterbelt. The only corn left is just north of the entrance road.

In January a load (216 bushels) of barley was picked up at Snake Creek Refuge and spread on the ice on the east portion of Headquarters Lakes. This was followed with 65 bushels of barley in February. By early April there were 3-4,000 ducks (mostly divers) feeding on this grain and it appeared to be all utilized by April 20.

II. WILDLIFE

A. Migratory Birds.

1. Geese and Swans.

Goose use was down slightly while swan use took a big drop from 1967 (See Graph No. 1.) The spring peak of geese and swans was 100 and 18 respectively, while the fall peak was 13 and 72. All geese were of the small Canada type and the swans were all whistlers.

The 1969 goose use should take a big jump because of the goose project (See Section V.) Another Horicon is not anticipated, but a large increase is bound to result.

The swan decrease is difficult to explain. Apparently they did not come through in the spring as in the past two years. In last years NR the theory that increasing spring use was a result of feeding was discussed. Feeding was done again but the use never developed. This theory will be tested again in 1969.

2. Ducks.

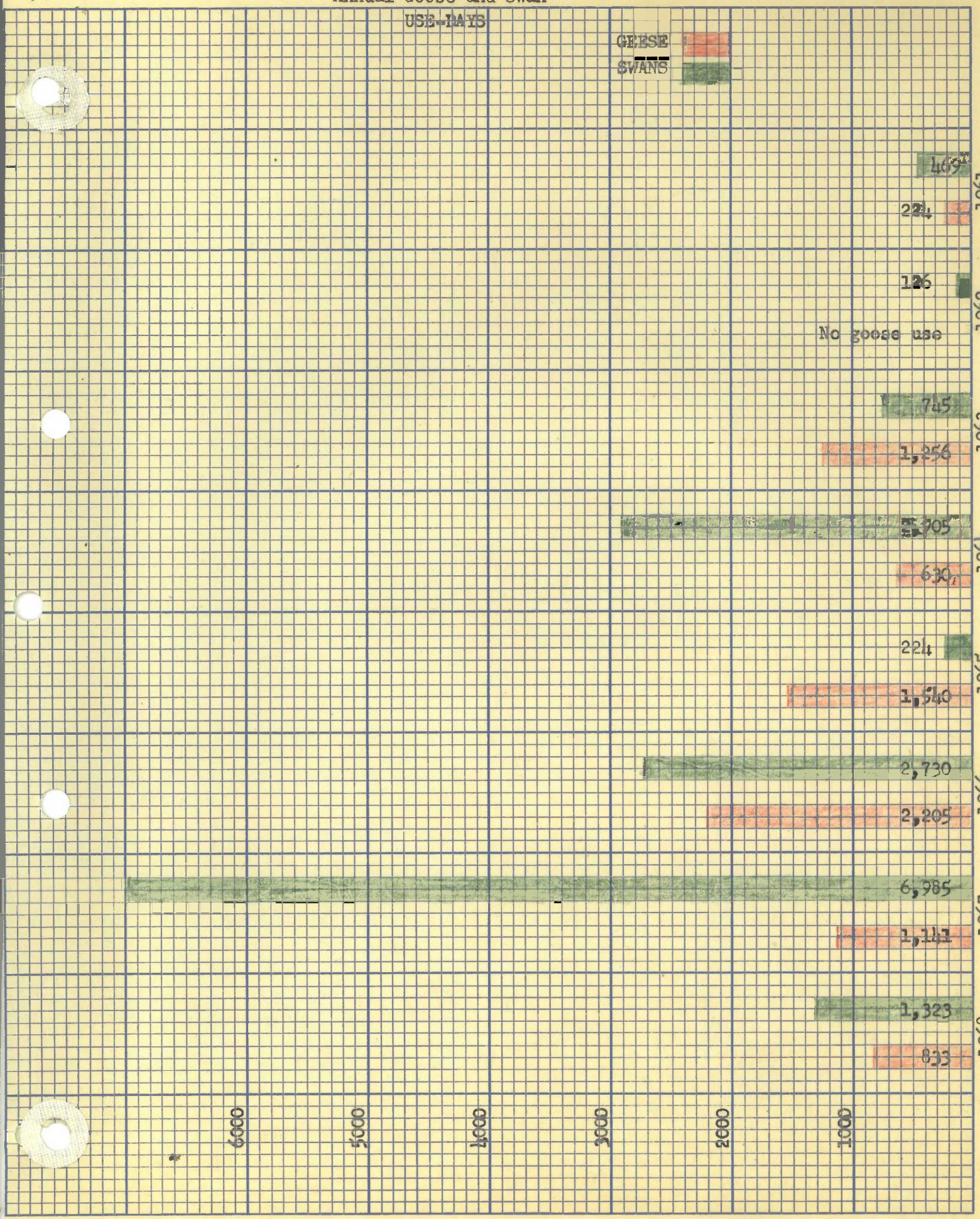
Ducks (7 mallards) were first observed on March 6, over two weeks earlier than last year, and a week earlier than any time during the past 10 years. By April 5 all species were present except blue-winged teal, shovelers, and ruddy ducks.

The peak spring count of 4,400 ducks was reached on April 5 compared to a peak of 4,930 on April 14 in 1967. This years peak is misleading because of the very high number of redheads. Actually, all species took a nosedive except blue-winged teal and redheads.

GRAPH NO. 1

Annual Goose and Swan

USE-DAYS



EUGENE DIETZGEN CO. NO. 375

Table Number 2 shows the peak count of common ducks (by species) present during the spring period.

Note: This table is not related to the weekly count.

TABLE NUMBER 2

Peak Spring Population of Common Ducks

	1963	1964	1965	1966	1967	1968
Mallard	180	190	235	370	600	160
Gadwall	110	170	70	200	290	65
A. widgeon	90	100	100	150	585	30
Pintail	140	70	185	200	320	50
BW teal	120	70	60	210	140	290
Shoveler	60	80	20	150	100	50
Total Dabs.	700	680	670	1,280	2,035	645
Redhead	80	1,420	1,870	325	1,260	3,500
Ring-necked	30	10	25	70	60	10
Canvasback	40	530	680	365	290	110
Scaup	1,100	1,010	2,040	2,060	1,490	450
Ruddy	10	80	40	70	120	10
Total Divers	1,260	3,050	4,655	2,890	3,220	4,080
Total Ducks	1,960	3,730	5,325	4,170	5,255	4,725

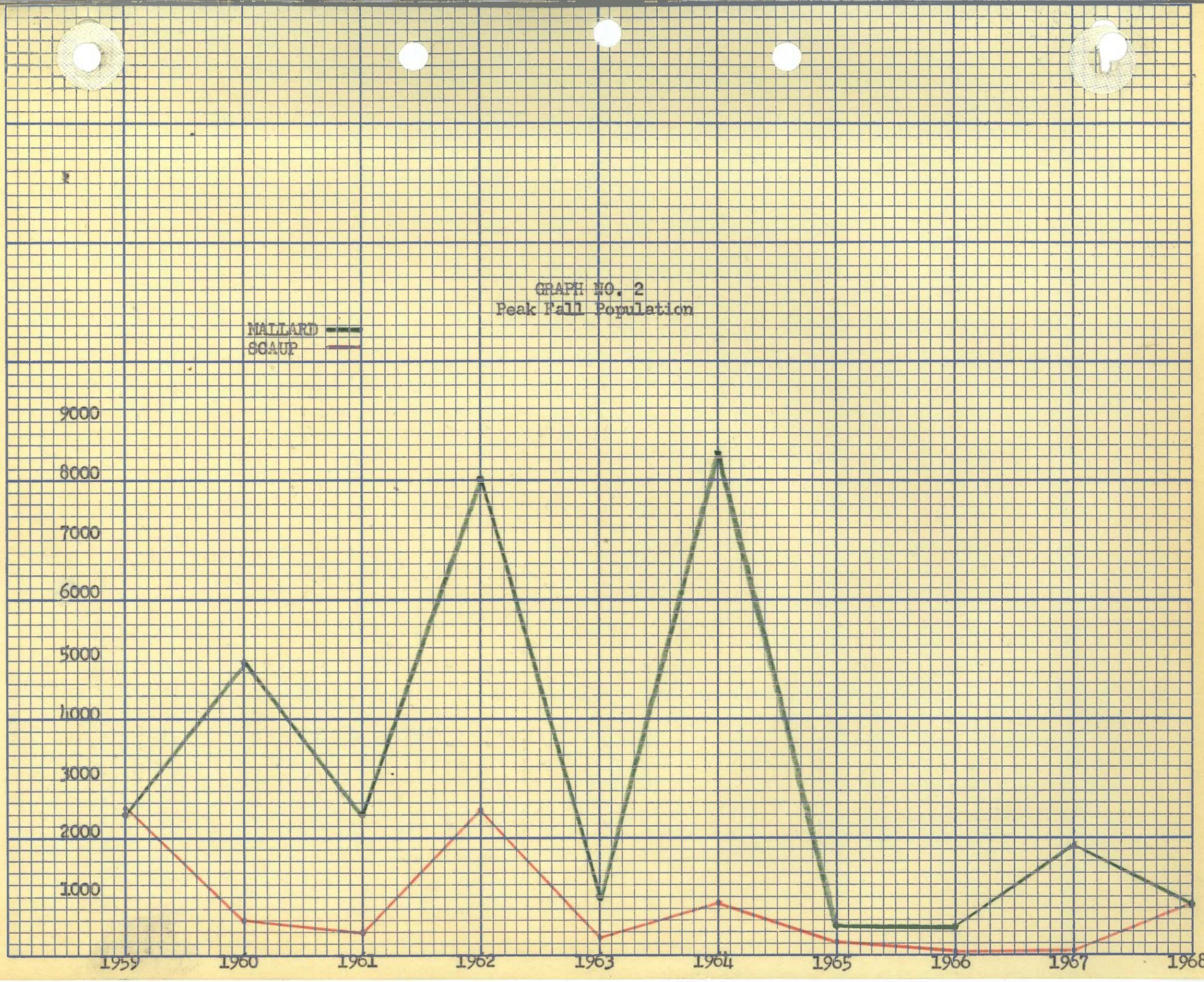
The high number of redheads is hard to explain. They spent most of their time in South Marsh (east), and fed on the grain in Headquarters Lakes (east). The redhead peak is a new spring record. The previous high was in 1965.

The fall peak of 1,775 was reached on 10/21 and compares with last years peak of 2,234. On this date the "can" high of 55 was recorded. This compares with an unusual high of 360 in 1967. "Cans" were very scarce all over this general area.

Mallards and scaup were much below average as can be seen in Graph No. 2.

One breeding pair count was made starting on May 20 and ending May 23. The walk-wade method was used in all water areas that could not be accurately counted from a vehicle. Table Number 3 compares the breeding pair count for the past four years.

GRAPH NO. 2
Peak Fall Population



EUGENE DIETZGEN CO. NO. 375

TABLE NUMBER 3

Duck Breeding Population

PAIRS

	1965	1966	1967	1968
Mallard	18	35	44	32
Gadwall	17	25	24	32
A. widgeon	3	7	0	0
Pintail	4	12	9	11
GW teal	0	0	3	0
BW teal	22	55	70	145
Shoveler	10	15	38	24
Total Dabblers	74	149	188	244
Redhead	5	15	12	10
Canvasback	6	15	4	4
Scaup	11	15	5	8
Ruddy	20	6	1	3
Total Divers	42	51	22	25
Totals	116	200	210	269

Only one brood count was made (7/18) compared to the normal two. Map Number 1 in the 1967 NR shows the route and five minute scan sites. Table Number 4 compares observed broods with estimated broods for the past three years. This years figures for observed broods are reduced because only one count was made.

TABLE NUMBER 4

Duck Broods

	Observed Broods			Estimated Broods		
	1966	1967	1968	1966	1967	1968
Mallard	6	6	1	15	22	10
Gadwall	1	8	3	12	25	10
A. widgeon	1	0	0	3	0	0
Pintail	0	1	0	4	5	3
BW teal	6	8	8	20	22	40
Shoveler	1	2	1	5	5	7
Total Dabblers	15	25	13	59	79	70
Redhead	3	2	0	7	5	4
Canvasback	4	2	1	7	5	2
Scaup	4	1	0	7	3	3
Ruddy	1	1	0	3	3	3
Total Divers	12	6	1	24	16	12
Totals	27	31	14	83	95	82

The estimated total of 82 broods and 269 pairs gives a productivity figure of 30%. This is in line with the January, 1969 memo sent to all North Dakota managers by Biologist Hammond. He states, "The calculated production rates for 1968 (from Brood/Pair ratios and assuming that the average for the two years was 45%) was 31.5% for dabblers. Looking at all data, we would estimate that the rate for North Dakota in 1968 was about 25% (plus or minus 5%)."

Table Number 5 shows estimated production for the past six years.

TABLE NUMBER 5

Estimated Production

	1963	1964	1965	1966	1967	1968
Mallard	38	50	75	90	130	60
Gadwall	60	30	105	75	150	60
A. widgeon	11	5	10	15	–	–
Pintail	19	30	10	20	30	20
BW teal	68	55	60	120	130	240
Shoveler	13	15	20	25	30	40
Redhead	13	10	5	40	30	25
Canvasback	–	20	20	40	30	10
Scaup	–	4	30	40	15	15
Ruddy	7	40	50	15	15	15
Totals	229	259	385	480	560	485

Use-days declined from last year, mainly because of a big drop in the May-August period. The differences in use-days by seasons for the past six years can be seen in Table Number 6.

TABLE NUMBER 6

Duck Use-Days By Season

	1963	1964	1965	1966	1967	1968
Jan-Apr	39,270	48,545	49,490	54,425	89,670	79,835
May-Aug	47,740	50,113	35,595	86,170	119,945	69,335
Sep-Dec	50,232	305,389	98,252	41,370	74,760	83,300
Totals	137,242	404,047	183,337	181,965	284,375	232,470

3. Coots.

Total coot use-days set another record high and continue the phenominal growth of the last three years. This growth can be seen in Table Number 7.

The peak fall population of 1,860 also set a new record by surpassing the previous high of 1,630 set in 1966. As in the past few years most of the birds concentrated in Northwest Slough.

The breeding population was estimated at 77 pairs, and production at 175.

TABLE NUMBER 7

Coot Use-Days By Season

	1963	1964	1965	1966	1967	1968
Jan-Apr	2,310	700	0	105	490	35
May-Aug	8,120	7,630	4,480	6,685	17,850	23,590
Sep-Dec	3,570	6,790	9,030	32,130	45,920	55,860
Totals	14,000	15,120	13,510	38,920	64,260	79,485

4. Water and Marsh Birds.

The cormorant peak of 95 on September 9 compares with last years high of 350, and 30 in 1966. They spent nearly all of their time in Harker Lake, along with the white pelicans. There were 50 pelicans compared to 35 last year and 55 in 1966.

Pied-billed and western grebes were numerous and appeared to increase, while eared and horned grebes seemed to decrease compared to previous years. Western grebes were especially numerous in the fall when 22 were counted on September 13. This compares with 2 in the fall of 1967.

Great blue herons were down in numbers with only one recorded in the fall compared to at least five during the past three years. Two were observed on June 1.

Sandhill crane numbers in the Horsehead and Kunkle Lake areas seemed to be about the same as last year (10,000) although no counts were made. An unusual event took place when four sandhills were observed on Slade Refuge on July 19. Cranes are not usually observed in this area from about early May until the middle of August.

5. Shorebirds, Gulls, and Terns.

A killdeer nested in the headquarters lawn where she laid three eggs of which two hatched. Killdeer were scarce in this area compared to past years.

A pair of marbled godwit were seen frequently in G-6, and it is presumed they had a nest nearby. No avocets or willets were observed.

Gull numbers remained low, with the Franklin's (170 peak) being the most common, followed in order by the ring-billed and herring. Last year the Franklin's and ring-billed gulls were reversed from the above normal order.

6. Mourning Doves.

The peak number of 70, and production of 45, is about the same as 1967. The headquarters shelterbelt continues to be the most popular nesting spot.

B. Upland Game Birds.

1. Ring-necked Pheasant.

The pheasant population shows no signs of recovering. The estimate of 25 at the end of the year compares with 30 a year earlier. Only one brood was observed, and production is estimated at 20.

2. Sharp-tailed Grouse.

The sharptail population remains fairly good, with a year end estimate of 75 compared to 80 in 1967. Two broods were observed, with a total of 14 plus young. Production is estimated at 30.

The grouse made good use of the entrnce road corn strip. The maximum number observed there was 37 on December 30.

The dancing ground was checked twice in April. On the 16th there were six males and two females, and on the 29th nine males and four females. This compares with male counts of nine, six and twelve in 1967, 1966, and 1965 respectively. The ground was again mowed in August for fall use and to be sure it is ready for spring.

3. Gray Partridge.

"Hun" numbers are down slightly with a year end estimate of 20 compared to 25 last year. One hen was observed on July 25 with at least seven young. On November 19 a covey of seven was using the headquarters shelterbelt.

~~4. Pinnated Grouse.~~

4. Pinnated Grouse.

No pinnates were observed in this general area.

C. Big Game Animals.

The white-tailed deer decline of recent years was halted with a bucks only season. They reached a peak of 20 in October and there were still 10 present at the end of the year.

There are still occasional reports of mule deer sightings in the area, but none have been seen by refuge personnel. No other big game animals are in this vicinity.

D. Fur Animals, Predators, Rodents, and Other Mammals.

1. Fur Animals.

Muskrats are down to an estimated 5 animals compared to 15 last year and 10 in 1966. No sightings were made and no houses are present.

Mink and long-tailed weasel numbers remain low with an estimate of eight for each species. Sightings during the year included two mink and one long-tailed weasel. No other weasels were seen.

2. Predators.

Raccoon observations were much below last year and it appears predator control work had some effect. A total of 9 were removed compared to 18 in 1967. The peak population is estimated at 15, half of last years estimate.

The skunk population remains fairly high with 10 destroyed compared to 8 a year ago. One of these was a spotted skunk caught in a jump trap at the 4-H Camp on April 8. This is a new mammal record for the refuge. There are very few in the state, but at least two others have been recorded.

The peak red fox population is estimated at 10 compared to 12 last year. No foxes were destroyed this year although some trapping effort was made. There are no gray fox known to be present in this area.

Badgers were seen occasionally, but their numbers remain low, with a population estimate of five, the same as last year. None were destroyed because of their control work on pocket gophers.

Table Number 8 lists the predators destroyed in the last four years.

TABLE NUMBER 8

Predator Control

Calendar Year

	1965	1966	1967	1968
Raccoon	7	14	18	9
Skunk	7	3	8	10
Fox	3	0	4	0

3. Rodents and Other Mammals.

Jack rabbit and cotton-tail rabbit numbers remain about the same as last year with peaks estimated at 30 and 10 respectively.

Thirteen-lined ground squirrel numbers appeared to be down, but they remain the most numerous ground squirrel. Franklin's and Richardson's did not seem to change in numbers. Pocket gophers are numerous with no change in population noticed.

One hoary bat was captured on 8/6 in the headquarters shelter-belt.

E. Hawks, Eagles, Owls, Crows, Ravens, and Magpies.

Eagles sighted during the year include a golden on 2/27 and 11/13, and a bald on 3/30. Hawk numbers were about the same as last year with the marsh hawk the most common. A pair of Swainson's hawks raised three young just off the east boundary of the refuge.

One snowy owl was observed on 3/10, and at least one horned owl was present all year. At the end of the year two short-eared owls were seen several times.

Crows reached a spring peak of 100 on 3/29, and a fall peak of 45 on 9/30. This compares with 1967 spring and fall peaks of 500 and 400 respectively. No crows nested on the refuge.

No ravens or magpies were observed on the refuge, however five magpies were seen in October on the state game management area three miles south of the refuge.

~~F. Other Birds~~.

F. Other Birds.

Fifteen redpolls showed up at headquarters on 12/17 after a complete absence in 1967. The first meadowlark was observed a week earlier, while red-winged blackbirds were only one day ahead of 1967. See Table Number 9 for the dates small birds were first observed.

TABLE NUMBER 9

Common Name	Date First Observed	Number
Prairie horned lark	1/4	Many
Starling	1/5	1
Downy woodpecker	2/5	1
Tree sparrow	3/6	2
Meadowlark	3/14	1
Red-winged blackbird	3/26	5
Robin	3/30	5
Slate-colored junco	3/30	2
Yellow-shafted flicker	3/30	1
Common grackle	3/30	1
Towhee	4/30	1
Yellow-headed blackbirds	4/30	Many
Western kingbird	5/1	1
Harris' sparrow	5/6	1
White-crowned sparrow	5/7	2
Chipping sparrow	5/7	3
Olive-backed thrush	5/8	1
Yellow warbler	5/9	1
Myrtle warbler	5/10	1
Clay-colored sparrow	5/10	4
Brown thrasher	5/10	1
Gray-cheeked thrush	5/10	1
Bob-o-link	5/15	2
Goldfinch	5/20	3
White-throated sparrow	5/21	Several
Blue jay	5/22	3
Catbird	5/22	2
Red-headed woodpecker	5/23	1
Eastern kingbird	5/23	5
Baltimore oriole	5/23	1
Black-billed cuckoo	6/6	1
Cedar waxwing	7/7	2
Night hawk	8/29	1

G. Fish.

Fathead minnows and sticklebacks remain numerous, but no other fish are known to be present.

H. Reptiles.

Garter snakes, painted turtles, and tiger salamanders are common. Three hog-nosed and two smooth green snakes were observed during the year.

I. Disease.

None noted.

III. REFUGE DEVELOPMENT AND MAINTENANCE

A. Physical Development.

Six yards of fill material was placed in the washed out portion of Dike Number 3. The Long Lake Refuge D7 "Cat" was used to fill in the three old dumps and to construct three new ones.

New linoleum was installed in the dining room, and the basement room ceiling and walls were panelled in the residence.

A new boat launching ramp was constructed in May at the Recreation Area. The ramp is 16' wide, 70' long, and 6" thick. The contractor charged $784.00 for the cement work. The refuge has about $150.00 additional in the cost, resulting from labor and the use of the D7.

The D7 was used to push the first 22' long section into the lake. Steel rods were left protruding from this section so that the next section poured would be well anchored. The system worked nicely and the public was well satisfied with the new ramp.

A small parking lot was constructed near the boat ramp by mowing grass and buck brush, and outlining the three sides with railroad ties.

The Service Building and the Oil Shed were painted on the outside. A new water softener was installed in the residence.

A small winter holding pen was constructed for the goose project. Just east of this an $8\frac{1}{2}$ acre pen was constructed for the geese to use from March-November. This pen includes a four acre pothole and should be ideal for the birds.

B. Plantings.

1. Aquatic and Marsh Plants.

None.

2. Trees and Shrubs.

Five hundred eastern red cedar were used to replace trees that died from the severe 1967 drought.

3. Upland Herbaceous Plants.

None.

4. Cultivated Crops.

Crop yields per acre were much better than last year and are estimated at; wheat - 9 bu., oats - 35 bu., barley - 26 bu., and corn - 15 bu.

C. Collections and Receipts.

None.

D. Control of Vegetation.

Eleven small patches of leafy spurge were sprayed in May, and the regrowth that appeared in nine of these was sprayed in July. All spraying was done with Tordon from a hand sprayer. Map Number 2 shows the location of spurge patches sprayed this year.

The poison ivy at the Recreation Area was sprayed again this year because of the Safety hazard to visitors. Trysben 200 was used, and it appears to be very effective. There is a lot more ivy south of the Recreation Area that is not practical to spray.

E. Planned Burning.

None.

F. Fires.

The fire hazard was relatively low all year and no fires occurred.

SLADE NATIONAL WILDLIFE REFUGE

KIDDER COUNTY, NORTH DAKOTA

UNITED STATES
DEPARTMENT OF THE INTERIOR

FISH AND WILDLIFE SERVICE
BUREAU OF SPORT FISHERIES AND WILDLIFE

R72W R71W

99°44'

46°52'

46°50'

MAP NO. 2

LEAFY SPURGE PATCHES
SPRAYED IN 1968

COUNTY ROAD

ALKALINE LAKE

UPPER HARKER LAKE

HARKER LAKE

LAKE ISABEL

REFUGE HEADQUARTERS

UNDERGROUND POWER LINE

TRANSFORMER

CLUBHOUSE

ELECTRIC PUMP

NORTH DAKOTA STATE HIGHWAY NO. 3

CAMP GRASSICK

REFUGE BOUNDARY

Note: Entire boundary is fenced

T 139 N

T 138 N

R72W R71W

COMPILED IN THE BRANCH OF ENGINEERING

MINNEAPOLIS, MINNESOTA MARCH, 1960

FIFTH PRINCIPAL MERIDIAN

Scale 20 0 20 40 60 CHAINS
1/4 0 1/4 1/2 3/4 MILES

TOWNSHIP DIAGRAM

MEAN DECLINATION 1960

3R N.D. 394 408

IV. RESOURCE MANAGEMENT

A. Grazing.

Four permits were issued compared to three in 1967. A total of 382.44 AUM's were utilized at $2.45 per AUM.

The units grazed included G-4,5,6, and 7. The grasses in these units are mostly tame (primarily brome), and there was a lot of grass left after the cattle were removed.

B. Haying.

No haying is allowed except on the landing strip and roadsides. No charge is made because of the time of year, and the fact that the refuge would have to mow the grass anyway.

C. Fur Harvest.

No trapping ~~have~~ has been permitted since 1963.

D. Timber Removal.

None.

E. Commercial Fishing.

None.

F. Other Uses.

None.

V. FIELD INVESTIGATION OR APPLIED RESEARCH

A. Nesting Platform Study.

Thirty four nesting platforms were available, the same number as in 1967. Table Number 10 shows platform use.

TABLE NUMBER 10

Nesting Platform Use

1968

Type Platform	Date Checked	Platform Number	Number of Eggs	Status of Eggs
½ 30 Gal. Barrel	5/20	8026	11	Incub.
½ Tractor Gas Tank	5/20	8028*	7	Clutch Incomplete
Washing Machine Tub	5/21	8004*	9	Incub.
½ 30 Gal. Barrel	5/21	8022*	9	Incub.
Dill Type Fibre Glass	6/19	8042	9	Just Hatching
Washing Machine Tub	6/19	8004		Hatched 1 Unhatched
½ 30 Gal. Barrel	6/19	8022		Hatched
½ 30 Gal. Barrel	6/19	8026		Hatched
½ Tractor Gas Tank	6/19	8028		Hatched 2 Unhatched

*Had nest in 1967.

The nest on platform 8028 is estimated to have contained 9 eggs when complete. This means a total of 47 eggs were laid in 5 nests. Of these, only 3 were found unhatched. As in the past, no predation is known to have occurred. Table Number 11 compares use for the last 4 years.

TABLE NUMBER 11

Nesting Platform Use

1964-1968

Year	Platforms Erected	Platforms Useable	Number of Nests*	Nests Hatched	Nests Deserted
1964	4	4	0	0	0
1965	8	8	3	2	1
1966	34	37**	4	4	0
1967	0	34**	7	6	1
1968	0	34**	5	5	0

*All nests have been made by mallards.
**Ice destroyed those missing.

No new platforms have been erected the past two years because of nesting platform studies being conducted by the research center.

B. Pothole Blasting.

Two potholes (Numbers 18 and 19) were blasted using the ANFO mix. The holes measured about 4' deep and 34' long by 28' wide. They are located on the north shore of South Marsh (East). The same blasting technique was used as recorded in the 1966 NR.

C. Duck Banding.

Good results were obtained this year in reaching the quota of 200 blue-winged teal. The first teal were banded on August 12 and the last on the 28th. Baiting was started on August 7.

Because of higher water the trap had to be moved a few feet and rebuilt. After moving, one opening was in about 10" of water and the other was at the waters edge.

A total of 242 blue-winged teal were banded at a cost of $ 75.00, or $ .31 per bird. Labor (22 Hours) accounted for $ 62.50, grain $ 7.50, and equipment $ 5.00. There were no material costs as the old trap was used. All banding was done by Biological Aid Ericks, Laborer Hottman, and Manager Mansfield.

TABLE NUMBER 12

Slade Refuge Banding

Blue-winged Teal

	1966	1967	1968
IM	180	32	95
IF	206	21	84
AM	2	3	39
AF	5	2	24
Total	393	58	242

During the banding operation two adult male blue-wings were captured which had previously been banded. One was banded near Mitchell Bay, Ontario on 8/22/66, and was trapped here on 8/19/68. The other was banded near Port Rowan, Ontario on 9/6/65, and was trapped on 8/25/68.

Table Number 13 lists the returns received during the year from ducks banded at Slade Refuge.

TABLE NUMBER 13

Band Returns

Species	Date Banded	Date Recovered	Where Recovered
Mallard	8/17/66	12/9/67	S. of Longview, Texas
BW Teal	8/18/66	4/6/68	10 Mi. W. Stuttgart, Ark.
BW Teal	8/19/66	12/?/67	Near Jena, La.
BW Teal	8/31/66	1/?/68	Sisal, Yucatan, Mex.
BW Teal	8/24/67	9/13/67	3 S., 3 E. White Lake, S. Dak.
Mallard	8/26/67	11/13/67	Near Onida, S. Dak.
Mallard	8/27/67	12/2/67	Near Holla Bend Ref., Ark.
Mallard	8/29/67	11/2/67	SW of Tappen, N. Dak.
Mallard	8/30/67	10/7/67	McGregor, Minn.
Mallard	8/31/67	11/25/67	3 SW Mendon, Mo.
BW Teal	8/28/68	10/5/68	5 E. Morris, Minn.

VI. PUBLIC RELATIONS

A. Recreational Use.

The Lake Isabel Recreation Area was open from May 15 through September 15 for swimming, picnicing, and boat launching. Actual visits increased from 5,241 last year to 5,590 this year.

The area was operated as a U. S. Fee Area for the second year. Total receipts were $ 1307.00 compared to $ 1395.50 last year. Collection expenses amounted to $ 551.61. No entrance fees will be charged in 1969.

The 4-H Camp was used from June to July by the following campers:

Dates	County	Number
June 16-19	Jr. Leadership Camp	24
June 19-22	Morton	70
June 23-26	Burleigh	61
June 26-29	Burleigh	75
June 30-July 3	Emmons	80
July 7-10	Logan, McIntosh	70
July 10-13	Kidder	60
	Total	440

All the campers, except the Jr. Leadership and first Burleigh County camp, were taken on a one hour tour of the refuge. This program was well received.

The 4-H Camp Association has acquired some land along the Missouri River near Washburn. Plans call for a new camping area to be opened there in 1970. If the plans are carried out, 1969 will be the last year they will camp at Slade Refuge.

B. Refuge Visitors.

See Official Visitor Log following this page.

C. Refuge Participation.

2/29-3/2 Mansfield attended the winter workshop of the American Association for Conservation Information at Bismarck.

3/18 Mansfield presented a slide-talk to 68 children and teachers at the Dawson School.

4/11	Mansfield presented a slide-talk to 453 children and teachers at the Steele School.
4/16-18	Mansfield attended a Wetland Public Relations Workshop at Fargo.
4/23	Mansfield attended the Wetland Office meeting at Jamestown
5/14	Hansen and Mansfield attended a Wetland Manager's meeting at the NPWRC.
6/21	Mansfield took 70 Morton County 4-H Campers on a refuge tour.
6/24	Mansfield gave a talk to 61 Burleigh County 4-H Campers.
6/27	Mansfield took 75 Burleigh County 4-H Campers on a refuge tour.
6/28	Mansfield met with the Camp Grassick Directors to advise them of refuge policies.
7/2	Mansfield took 45 Emmons County 4-H Campers on a refuge tour.
7/8	Mansfield took 70 Logan-McIntosh County 4-H Campers on a refuge tour.
7/11	Mansfield took 55 Kidder County 4-H Campers on a refuge tour.
7/23	Mansfield presented a slide-talk to 95 children and counselors at Camp Grassick.
10/7	Mansfield gave a talk and showed a movie to 30 members of the Steele Lions Club.
11/14	Mansfield attended a meeting of managers at the NPWRC conducted by Messrs. Greenwalt and Carlsen.
11/29	Mansfield announced the donkey basketball game at Steele.
12/2	Mansfield attended the Hufnagel water right hearing at Bismarck.

OFFICIAL VISITORS LOG

NAME	ORGANIZATION	PURPOSE OF VISIT	DATE	
			ARRIVED	DEPARTED
Marlin Syverson	SCS - Steele	General	1/10	1/10
Ken Ystesund	AAO - Jamestown	WPA's	1/12	1/12
Wm. McClure	USCMA - Bismarck	Law Enforcement	2/8	2/8
Marlin Syverson	SCS - Steele	General	2/12	2/12
Tom Klett	NPWRC - Jamestown	Waterfowl - Long Lake	2/15	2/15
Ken Ystesund	AAO - Jamestown	WPA's	2/16	2/16
Marlin Syverson	SCS - Steele	Courtesy Call	2/20	2/20
Arnold Kruse	Arrowwood Refuge	Courtesy Call	2/27	2/27
Thomas Atkins	Arrowwood Refuge	Courtesy Call	2/27	2/27
Marlin Syverson	SCS - Steele	Courtesy Call	3/6	3/6
Ken Ystesund	W.O. - Jamestown	WPA's	3/7	3/7
Ted DeKrey	Pettibone	Grazing Permit	3/7	3/7
Allen Dahn	Steele	Agricultural Permit	3/7	3/7
Harry Feist & Son	Moffit	Grazing - Long Lake	3/11	3/11
Leo Vetter	Moffit	Grazing - Long Lake	3/11	3/11

OFFICIAL VISITORS LOG

NAME	ORGANIZATION	PURPOSE OF VISIT	DATE ARRIVED	DATE DEPARTED
Marlin Syverson	SCS - Steele	Courtesy Call	3/14	3/14
Wm. Lane	Moffit	Grazing - Long Lake	3/15	3/15
M. C. Hammond	Area Biologist - Towner	WIP's	3/15	3/15
Merlyn Albertson Henry Johnson	Teachers - Steele	Refuge Tour	3/16	3/16
Local Farmers	Tappen and Dawson	Permit Sign-up	3/25	3/25
Peter & Seb. Materi	Bismarck	Employment possibilities	3/26	3/26
Rev. Benson	Lutheran pastor - Steele	Courtesy Call	3/26	3/26
Marv Dunsen	RO - Minneapolis	Ramp at Lake Isabel	3/26	3/26
Harold Kleppe	Farmer - Dawson	Grazing Permit	3/27	3/27
G. J. Lang	Farmer - Dawson	Grazing Permit	3/28	3/28
Allen Dahn Mr. & Mrs. Pfefferkorn	Farmers - Steele & Driscoll	Agricultural Permits	4/4	4/4
Ken Ystesund	W.O. - Jamestown	WPA's	4/4	4/4
Ken Ystesund	W.O. - Jamestown	WPA's	4/5	4/5
Jim Williams	Bismarck	Courtesy Call	4/10	4/10
Alvin Scharr	Contractor - Napoleon	Ramp at Lake Isabel	4/11	4/11

OFFICIAL VISITORS LOG

NAME	ORGANIZATION	PURPOSE OF VISIT	DATE	
			ARRIVED	DEPARTED
Marlin Syverson	SCS - Steele	Courtesy Call	4/18	4/18
Ken Ystesund	W.O. - Jamestown	WPA's	4/24	4/24
Alvin Scherr	Contractor - Napoleon	Boat ramp and surplus barn	4/24	4/24
Walter Presler	Farmer - Geckle	Grazing land	4/24	4/24
John Berreth	Farmer - Dawson	Barn bid	4/26	4/26
Adam Hoff	Farmer - Arena	Fencing supplies	5/1	5/1
Ken Ystesund Stan Weisz	W.O. - Jamestown	Goldsmith WPA	5/2	5/2
George Doll, Jr.	Farmer - Dawson	Barn bid	5/9	5/9
Ken Ystesund	W.O. - Jamestown	WPA's	5/16	5/16
R. V. Watkins	Sanitary Engineer Kansas City, Mo.	Inspect sanitary facilities	5/24	5/24
Allen Dahm	Farmer - Steele	Grazing - Long Lake	5/28	5/28
Marlin Syverson	SCS - Steele	Courtesy Call	6/3	6/3
Forrest Lee	NPWRC - Jamestown	Wildlife studies	6/4	6/4
James Williams	Bismarck	Courtesy Call	6/4	6/4
M. C. Hammond	Area Biologist - Towner	Width Study	6/5	6/5

OFFICIAL VISITORS LOG

NAME	ORGANIZATION	PURPOSE OF VISIT	DATE ARRIVED	DATE DEPARTED
Wm. Bair	Asst. Area Biologist - Towner	Width Study	6/5	6/5
Lyman Reyholdson	USGMA - Minot	Rec. Area violations	6/5	6/5
Clifford Kleve	Farmer - Steele	Hay	6/6	6/6
Ronald Brackenbury	Farmer - Steele	Hay	6/6	6/6
Henry Mueller	Farmer - Dawson	Refuge Boundary	6/11	6/11
Dr. & Mrs. Paul Springer & family	Assistant Director NPWRC - Jamestown	Courtesy Call	6/12	6/12
Al Sargeant	Biologist NPWRC - Jamestown	Look for marked BWT	6/15	6/15
Dr. & Mrs. Alfred Viola	Boston, Mass.	Bird Watching	6/15	6/15
Fred E. Hauck	Asst. Prof. Biology, Atlantic Union College, So. Lancaster, Mass.	Ground squirrel study-coccidiosis	6/27	6/27
Lester DeKrey	Emmons County Agent - Linton	4-H Tour	7/2	7/2
Bob Ivans	Sand Lake Refuge	Pick up signs - deliver surplus property	7/2	7/2
Jean Harris Vera Harey	Detroit, Mich.	Bird Watching	7/6	7/6
Marlin Syverson	SCS - Steele	Courtesy Call	7/12	7/12
Jack and Richard Bruton	Sacramento, Calif.	Courtesy Call	7/17	7/17
Marlin Syverson	SCS - Steele	Courtesy Call	7/25	7/25

OFFICIAL VISITORS LOG

NAME	ORGANIZATION	PURPOSE OF VISIT	DATE	
			ARRIVED	DEPARTED
Ken Ystesund	W.O. - Jamestown	WPA's	7/25	7/25
Don Polasky	Student - Tappen	Tour Refuge	7/30	7/30
Frank Knoke	W.O. - Jamestown	Courtesy Call	8/12	8/12
Dave Lindberg	W.O. - Jamestown	Courtesy Call	8/12	8/12
Edward Rudolph	Farmer - Dawson	Barn bid	8/26	8/26
Ken Ystesund	W.O. - Jamestown	Leno grazing	8/27	8/27
Dr. & Mrs. R. V. Landis	Appleton, Wisc.	Tour Refuge	8/28	8/28
Wm. Lane	Farmer - Moffit	Dead Cattle	9/3	9/3
Patrolman Engh	Hwy. Patrol - Steele	Courtesy Call	9/11	9/11
Earl Eliason	R.O. - Minneapolis	Rent Appraisal	9/16	9/16
Ken Ystesund	W.O. - Jamestown	WPA's	9/24	9/24
Phil Park	Kidder County Extension Agent - Steele	Courtesy Call	9/24	9/24
Edward Bumbby	Photographer Portland, Oregon	Photograph Cranes	9/30	9/30
Werner Kinnischtzke	Farmer - Tappen	Chevy Bid	10/7	10/7
Floyd Engh	Hwy. Patrol - Steele	Missing Car	10/7	10/7

OFFICIAL VISITORS LOG

NAME	ORGANIZATION	PURPOSE OF VISIT	DATE ARRIVED	DATE DEPARTED
Larry Haddock Ron Erickson	W.O. - Jamestown	Marsh Purchase	10/8	10/8
May Keim	Bismarck	Courtesy Call	10/9	10/9
Larry Haddock	W.O. - Jamestown	Canvasback Survey	10/22	10/22
Clair Rollings	R.O. - Minneapolis	Inspection - Grazing Units	11/1	11/1
Bob Kolodejchuk	Chevy Mtrs. - Steele	Courtesy Call	11/1	11/1
Mel Diers and 4 Scout Leaders	Steele	Overnight Camp	11/23	11/24
Clair Nicholson Lloyd Rowland	Dawson Asbury, Missouri	Courtesy Call	11/26	11/26
Stan Weisz	W.O. - Linton	WPA's	12/4	12/4
F. Lee, C. Stenvig, H. Doty	NPWRC - Jamestown	Goose Project	12/4	12/4
Larry Haddock Ron Erickson	W.O. - Jamestown	Canvasback information	12/5	12/5
Bob Kolodejchuk	Chevy Mtrs. - Steele	Courtesy Call	12/5	12/5
Don Schnabel	Dawson	Clerk vacancy	12/9	12/9
Ed Remmick	Farmer - Gackle	Grazing	12/16	12/16
Marlin Syverson	SCS - Steele	Courtesy Call	12/16	12/16
Wm. McClure & Son	USGMA - Bismarck	Law Enforcement	12/17	12/17

D. Hunting.

As in the past, the only hunting allowed on the refuge was for deer. The season opened at noon November 8 and closed at sunset November 17.

For the second year deer were not hauled out for hunters and this seems to hold down use. Also, for the first time since 1963, bucks only could be shot, and this also held down hunting pressure.

There were about 15 deer on the refuge when the season opened. The total known kill amounted to two yearling bucks. No more than 10 hunters used the refuge during the season.

Goose and duck hunting pressure was moderate in this area, and seemed to be about equal to 1967, while the kill appeared to be lower.

The first sandhill crane season in many years was open from November 9 through December 8 in Stutsman and Kidder Counties. Most of the cranes were gone south when the season opened, but about 2,000 were still in the vicinity of Horsehead Lake. The hunting pressure and kill were both light.

The pheasant season was open from October 19 through November 10. The low pheasant population resulted in few hunters and a very low kill.

The sharp-tailed grouse and gray partridge season was open from September 14 through December 15. Numbers ranged from fair to good, hunting pressure was light, and the kill seemed to be lower than last year.

Overall, 1968 was the poorest hunting season for this writer since being stationed in North Dakota (1961).

E. Violations.

No apprehensions made.

F. Safety.

Safety meetings were held during most months. The following topics were presented and discussed:

Defensive Driving
Storage and disposal of combustibles
Spreading a fire alarm

Seven steps to fire Safety
Precautions for driving in heavy snow areas
Life Line publications No's. 68-1,2,3, and 4
The Safety check list was reviewed
Lessons in defensive driving (with flip charts)
Fencing:
    Proper clothing and weather precautions
    Material and equipment handling
    Positions of body when installing wire
Ladders:
    Type, construction and storage
    Proper positioning
Scaffolds:
    Construction and location
    Removal and dis-assembly
Tractor rotary mowers - hazards and precautions
Rotary lawn mowers
Life Line No's. 68-11, 12 and 13
New life vests demonstrated
Fire extinguishers were used to put out various fires
Water Safety:
    Rescue of an individual
    Mouth-to-mouth resuscitation
    Safe boat and canoe handling
ABC's of hand tools
Life Line No. 68-21
The ten commandments of the highway
Director Burwell's memo 8/5/68 - Employee fatality
A Nebraska pesticide accident
Pesticides cast as possible villian
Benefits for the injured and rights of employees under BEC
Life Line No. 68-24, 25
Fog - the complete danger

In addition the film "Safety Everywhere, All the Time" was shown and discussed.

Safety accomplishments during the year include:

Installed a roll bar and SMV emblem on the tractor.
Tore down and removed old barn.
All personnel took the Defensive Driving course.
Extended the vent on the Slade gas supply tank.
All fire extinguishers were checked.
Checked all buildings for fire hazards.
Maintained about eight miles of fire breaks.

The Safety record now stands at 10,091 days without a "Lost-Time" accident.

VII. OTHER ITEMS

A. Items of Interest.

Assistant Manager Karl Hansen was promoted and transferred to Upper Mississippi Refuge at Savanna, Illinois on November 18. Karl and his family will be missed. They never complained, were always cheerful, and very much interested in wildlife.

Robert Wright arrived on January 7 to replace Karl. Bob is from the Prairie du Chien station of the Upper Mississippi Refuge. Bob, his wife Sally, and seven month old daughter Mary, are pretty well settled in the Long Lake residence. Because of his previous experience Bob will be a valuable asset to the Slade Refuge program.

Refuge Clerk Gerald Olson resigned effective 1/31/69 because he was tired of driving to Slade Refuge three days a week. He will be missed because of his ability and long experience as a clerk.

Gerald was replaced by Wilmer Brandt on 2/17/69. Wilmer and his wife Linda reside in Dawson where they seem to be well accepted. He has really taken hold of things and shows promise of becoming a real clerk.

B. Credits.

The manager wrote the entire report, with the typing credit going to the new clerk, Wilmer Brandt.

C. Photographs.

A section of photographs taken with Bureau and personal cameras is appended. The 3" X 5" photos were taken with the Slade Refuge Kodak Signet (35mm) camera, while the 3" X 3" photos were taken with the Long Lake Yashica 44 (127 film) camera.

NARRATIVE REPORT

FLORENCE LAKE NATIONAL WILDLIFE REFUGE

I. GENERAL

On March 8 Florence Lake was 100% ice covered with the surface 4 inches below the culvert in the south end of the lake. Water (about ½" deep) was flowing into the lake from the south marsh. On the above date the run-off was nearly over.

On April 8 the main lake was 60% open, and the surface was 3 inches below the culvert. The larger marshes were about 50% open, and all small potholes were ice free. Water levels could best be described as fair.

The water in the main lake was 2 inches deep in the culvert on June 13. Water conditions improved some because of heavy June rains and could be rated from fair to good.

On August 14 the water level in the main lake was 4 inches below the culvert. Most of the smaller potholes are dry.

No measure of the water level is available at freeze-up, but based on previous years it is estimated to be 7 inches below the culvert.

II. WILDLIFE

A. Waterfowl.

The following waterfowl counts were made during the year:

TABLE NUMBER 1

WATERFOWL COUNTS

	4/8	5/27 - 28*	8/14
Mallard	7	50	395
Gadwall	6	56	105
A. widgeon		4	10
Pintail		34	200
GW teal	6	2	
BW teal		222	85
Shoveler		20	50
Total Dabblers	19	388	845

	4/8	5/27 - 28*	8/14
Redhead	46	18	
Ring-necked	14		
Canvasback		10	12
L. scaup	34	12	
Goldeneye	26		
Bufflehead	4		
Ruddy		20	20
A. merg.	18		
Total Divers	142	60	32
Total Ducks	161	448*	877
Coots		86*	225

*Breeding pair count. Divide by two to get total pairs.

The total of 224 duck pairs compares with 265 in 1966, and 264 in 1967. Table Number 2 compares breeding counts by species for the past 3 years.

TABLE NUMBER 2

Breeding Pair Counts

	1966	1967	1968
Mallard	18	30	25
Gadwall	31	25	28
A. widgeon			2
GW teal	2	2	1
BW teal	147	149	111
Shoveler	16	13	10
Pintail	19	17	17
Redhead	9	9	9
Canvasback	5	4	5
L. scaup	5	5	6
Ruddy	15	10	10
Total Pairs	267	264	224
Coot Pairs	71	42	43

An extensive breeding pair count was conducted on May 27-28 by Manager Mansfield and Assistant Hansen. The count was made in the same manner as 1966 and 1967. The same pothole numbering system was used, but no marsh vehicle was used as in 1966. All numbered water areas were walked out (see map in 1967 NR).

Brood counts were conducted on July 17 and August 14 by Karl Hansen. Table Number 3 shows the results of these counts.

TABLE NUMBER 3

Brood Count Data

	7/17		8/14	
	Broods Observed	Corr.* Broods	Broods Observed	Corr.* Broods
Mallard	6	12	2	2
Gadwall	5	11	3	9
BW teal	9	23	2	2
A. widgeon	1	1	0	0
Shoveler	1	1	0	0
Pintail	0	0	1	1
Unid. dab.	0	0	1	5
Total Dabblers	22	48	9	19
Redhead	1	1	0	0
Canvasback	1	1	1	1
Ruddy	0	0	2	3
Total Divers	2	2	3	4
Total Broods	24	50	12	23
Coot young	12	25	13	25

*Computed from Water fowl Production Surveys Manual.

Based on pair and brood data, and information received from Biologist Hammond, production is estimated at 468 compared with 475 last year. The production figure is arrived at by estimating productivity at 35%. This means 78 broods were produced with an average brood size of 6.

Coot production is estimated at 100, the same as last year.

No swans were known to have used the refuge, while signs indicate only one flock of geese was present. The geese must have stopped for a short visit on March 6 or 7. On March 8 goose droppings on the road near the culvert indicated about 30-40 geese had recently spent some time there. Chances are these were Canada geese.

B. Upland Game Birds.

No pheasants have been observed since the 1966 blizzard, and it is doubtful any are present. Two sharp-tailed grouse were the only game birds observed, while gray partridge are known to use the area. Peak populations are estimated at 30 and 15 respectively, compared to 40 and 20 in 1967.

C. Other Birds.

Marsh hawks and great-horned owls were observed on several occasions. A great-horned owl can usually be seen near the old farmstead.

Common and black terns, pied-billed grebes, ring-billed gulls, and black-crowned night herons were common. Casual observations were made of the eared and western grebes, great blue herons, American bitterns, sora rails and double-crested cormorants.

D. Big Game Animals.

Peak white-tailed deer numbers are estimated at 30 compared to 35 last year. Sixteen were observed on March 8, and 3 on April 8. No other big game animals are present.

E. Predators.

Red fox, skunk, and raccoon are seen occasionally. As far as can be determined, the predator population has not changed in the past year. Peak populations are estimated at 4, 10, and 10 respectively.

III. REFUGE DEVELOPMENT AND MAINTENANCE

A. Physical Development.

On June 6 Moffit and Feist worked on the north and west boundary fences. They drove in about 60 steel and wood posts that had frost-heaved, and stretched portions of sagging fence.

They also filled in chuck holes on the trail near the old farmstead; removed an old, dead tree truck from the boundary fence near pothole number 39, and replaced 5 signs and one sign post.

B. Plantings.

A Cooperative Farming Agreement was issued to Joe Bernhardt to plant 30.2 acres of wheat and 14.8 acres of corn. The wheat yielded about 14 bushels and the corn 5 bushels per acre. The corn was left standing as the refuge share of the crop.

IV. RESOURCE MANAGEMENT

A. Grazing.

Grazing permits were issued to Harris Crimmins (G-1) and Charles Giedd (G-2). The G-1 permit ran from June 1 through September 30 for a maximum of 200 AUM's. The G-2 permit ran from May 16 through September 30 for a maximum of 130 AUM's.

Mr. Crimmins utilized 198.86 AUM's for which he paid $ 487.21, while Mr. Giedd utilized 58.94 AUM's and he paid $ 144.40.

G-1 was slightly overgrazed in 1967, so the total AUM's were reduced from 225 in 1967 to 200 in 1968.

EASEMENT REFUGE DISTRICT #1

Appert Lake.

Runoff was not sufficient to fill the lake and it is estimated the peak water level was about one foot below the spillway. When checked on April 24 the level was about two feet below the spillway. The lake arm that runs east and north had very little water.

On June 11 and July 10 water levels were about the same as above, but when checked on Agust 8 water conditions were poor with the level about three feet below spillway.

During all visits the upland conditions were poor to fair. Wildlife observations include the following:

4/24		6/11	7/10			8/8	
Mallard	10	6	Gadwall brood	7	Ib	BW teal	16
Gadwall	10	2	BW teal brood	6	IIa	Killdeer	1
Pintail	25		Shoveler brood	8	Ic	Mourning dove	4
A. widgeon	40	1	Upland plover	2			
GW teal	30		Killdeer	3			
Redhead	20		L. yellowlegs	3			
L. scaup	4						
GB heron	4						
GH owl	1						
Gray part.	2						
Coot		3					

Canfield Lake.

Water levels ranged from good to excellent and the lake looked much more attractive to waterfowl. On April 8 the lake was still 30% ice covered when 50 mallard, 8 pintails, and 10 ring-billed gulls were observed.

The following wildlife species were observed on June 13:

Mallard	50	Canvasback	2
Gadwall	50	Ruddy	20
Pintail	40	Coot	1,000
Redhead	4	Black tern	100

There were more ducks, especially divers, using the area that could not be observed.

Flickertail.

The spillway remains washed out so the area holds only about five acres of water when full. The upland is heavily grazed and Richardson's ground squirrels are numerous. The spillway did not look like any water had passed through.

Wildlife observed include the following:

4/24		8/8			
Mallard	4	Mallard	15	Rough-legged hawk	1
Gadwall	22	Gadwall	6	Ferruginous hawk	1
Pintail	6	Pintail	15	Franklin's gull	1
A. widgeon	30	A. Widgeon	1	Black tern	1
GW teal	8	BW teal	8	Willet	1
Shoveler	2	GW teal	10	Killdeer	1
Redhead	12	Shoveler	3	L. yellowlegs	1
M. godwit	2	Prairie falcon	1	Baird's sandpiper	15

Hutchinson Lake.

This area had very poor water in the spring, and it went dry in August. On April 8 the lake held about one foot of water and only four mallards were observed. On july 30 only sheet water remained and no wildlife was observed.

Lake George.

The following ducks were counted on October 30:

Main Lake		South Lake			
Redhead	14	Mallard	15	Redhead	15
Other ducks	18	Black	1	Canvasback	12
		A. widgeon	4	L. scaup	105
		Shoveler	10	Bufflehead	55

As in the past few years, hunting pressure remained light to moderate in the pass.

Lost Lake.

Not visited this year. This area will be included in the Garrison Diversion Program.

Springwater.

There are several easement refuges assigned to this district that should not be refuges - this area heads the list. The files show the highest duck count ever made was 14 mallards on 9/1/65. There is no way this area can be justified as a refuge.

Sunburst.

On March 4 the runoff was well underway and water was flowing in most gullies and ditches. Sunburst Lake was about 1½' below the spillway. No ducks were present.

On March 25 a second runoff was occurring from the last snow storm and the lake was now about ½ inch from spilling. Water was leaking from the face of the spillway. No ducks were on the lake but 50 mallards and pintails were flying over.

Water was barely flowing over the spillway on April 19, and about 100 ducks were on the lake. On April 24 the water was spilling about ¼ inch to ½ inch. The following wildlife species were observed:

Mallard	6	Shoveler	4	Great blue heron	1
Gadwall	22	Redhead	4	Great-horned owl	1
GW teal	9	Ringneck	20	Pheasant	3
A. widgeon	18	L. scaup	4	Jack rabbit	1
		A. Merganser	1		

The water level was about 2' below spillway on August 29 when the following were observed:

Mallard	20	GW teal	8	A. bittern	1
Gadwall	20	Pintail	10	BC night heron	1
BW teal	50	Coot	50	DC cormorant	1

The spillway continues to slowly deteriorate, and it is just a matter of time until it washes out. The spillway could easily go in the spring of 1969 because of the expected heavy runoff.

Mr. Roy Karvo, Hazelton, was given permission to trap the area, and he reported the taking of 32 muskrat, 2 raccoon and 1 red fox. He stated that raccoon seemed to be down in numbers, and that there were lots of muskrats left in the lake.

SIGNATURE PAGE

Submitted by:

Marvin Mansfield
(Signature)

Date: March 28, 1969

Refuge Manager
Title

Approved, Regional Office:

Date: APR 7 1969

J. C. Carlson
(Signature)

ASST

Regional Refuge Supervisor

3-1750
Form NP-1
(Rev rch 1953)

WATERFOWL

REFUGE Slade MONTHS OF January TO April, 19 68

(1) Species	(2) Weeks of reporting period 1	2	3	4	5	6	7	8	9	10	3/3-9
Swans:											
Whistling											
Trumpeter											
Geese:											
Canada											
Cackling Small											100
Brant											
White-fronted											
Snow											
Blue											
Other											
Ducks:											
Mallard											10
Black											
Gadwall											
Baldpate											
Pintail											
Green-winged teal											
Blue-winged teal											
Cinnamon teal											
Shoveler											
Wood											
Redhead											
Ring-necked											
Canvasback											
Scaup											
Goldeneye											
Bufflehead											
Ruddy											
Other											
Coot:											

Int. Dup. Sec., Wash., D.C. 37944

3-1750a
Co NR-1
(Rev. March 1953)

WATER FOWL
(Continuation Sheet)

REFUGE Slade MONTHS OF January TO April, 19 68

(1) Species	(2) Weeks of reporting period 3/10-16 (11)	17-23 (12)	24-30 (13)	3/31-4/6 (14)	7-13 (15)	14-20 (16)	21-27 (17)	(18)	(3) Estimated waterfowl days use	(4) Production Broods: seen	Broods: Estimated total
Swans:											
Whistling			5	10	18	15	12		420		
Trumpeter											
Geese:											
Canada											
Cackling Small									700		
Brant											
White-fronted											
Snow											
Blue											
Other											
Ducks:											
Mallard	20	30	50	150	160	120	40		4,060		
Black											
Gadwall				10	15	20	25		490		
Baldpate			10	15	30	20	10		595		
Pintail	20	20	20	50	50	30	15		1,435		
Green-winged teal				20	40	20	15		665		
Blue-winged teal							10		70		
Cinnamon teal											
Shoveler						10	20		210		
Wood											
Redhead			20	1,500	1,350	1,400	40		58,170		
Ring-necked							10		70		
Canvasback				110	100	50	35		2,065		
Scaup			10	450	400	300	250		9,870		
Goldeneye				55	50	10			805		
Bufflehead			10	10	10	10	15		385		
Ruddy											
Other C. Merganser			10	40	50	20	15		945		
Coots:							5		35		

(over)

	(5) Total Days Use	(6) Peak Number	(7) Total Production
Swans	420	18	
Geese	700	100	
Ducks	79,835	4,410	
Coots	35	5	

SUMMARY

Principal feeding areas Harbor, Headquarters Lakes (East), South Marsh

Principal nesting areas

Reported by Marvin Mansfield, Refuge Manager

INSTRUCTIONS (See Secs. 7531 through 7534, Wildlife Refuges Field Manual)

(1) Species: In addition to the birds listed on form, other species occurring on refuge during the reporting period should be added in appropriate spaces. Special attention should be given to those species of local and national significance.

(2) Weeks of Reporting Period: Estimated average refuge populations.

(3) Estimated Waterfowl Days Use: Average weekly populations x number of days present for each species.

(4) Production: Estimated number of young produced based on observations and actual counts on representative breeding areas. Brood counts should be made on two or more areas aggregating 10% of the breeding habitat. Estimates having no basis in fact should be omitted.

(5) Total Days Use: A summary of data recorded under (3).

(6) Peak Number: Maximum number of waterfowl present on refuge during any census of reporting period.

(7) Total Production: A summary of data recorded under (4).

Interior Duplicating Section, Washington, D. C.
1953

3-1750
Form NR-1
(Rev rch 1953)

WATERFOWL

REFUGE Slade MONTHS OF May TO August, 19 68

(1) Species	Weeks of reporting period (2) 4/28-5/4 1	5-11 2	12-18 3	19-25 4	5/26-6/1 5	2-8 6	9-15 7	16-22 8	23-29 9	6/30-7/6 10
Swans:										
Whistling										
Trumpeter										
Geese:										
Canada										
Cackling										
Brant										
White-fronted										
Snow										
Blue										
Other										
Ducks:										
Mallard	50	60	60	65	65	65	70	80	80	90
Black										
Gadwall	30	30	50	65	65	65	70	70	80	80
Baldpate	10	10								
Pintail	15	20	20	20	20	20	20	25	30	30
Green-winged teal	15	10	10							
Blue-winged teal	20	40	150	190	190	190	190	210	230	260
Cinnamon teal										
Shoveler	25	30	40	50	50	50	50	50	50	50
Wood										
Redhead	40	30	30	30	30	20	20	20	20	20
Ring-necked	10	10	10	10	10					
Canvasback	30	20	10	10	10	10	10	10	10	10
Scaup	200	160	30	15	15	15	15	15	15	15
Goldeneye										
Bufflehead	10	10								
Ruddy				5	5	10	20	20	20	20
Other										
Coot:	10	30	110	150	150	150	150	170	190	210

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3-1750a
NR-1
(Rev. March 1953)

WATER FOWL
(Continuation Sheet)

REFUGE Slade MONTHS OF May TO August, 1968

(1) Species	(2) Weeks of reporting period 7/1-13 (11)	14-20 (12)	21-27 (13)	28-8/3 (14)	4-10 (15)	11-17 (16)	18-24 (17)	25-31 (18)	(3) Estimated waterfowl days use	(4) Production Broods: seen	Broods: Estimated total
Swans:											
Whistling											
Trumpeter											
Geese:											
Canada											
Cackling											
Brant											
White-fronted											
Snow											
Blue											
Other											
Ducks:											
Mallard	100	100	100	100	100	100	90	90	10,255	1	60
Black											
Gadwall	90	100	100	110	120	120	130	110	10,605	3	60
Baldpate							10	70	700		
Pintail	40	40	40	40	30	30	30	20	3,430		20
Green-winged teal									245		
Blue-winged teal	260	280	300	320	280	260	240	190	26,460	8	240
Cinnamon teal											
Shoveler	60	70	70	60	50	40	40	40	6,125	1	40
Wood											
Redhead	20	20	10	10	10	10	10	10	2,520		25
Ring-necked									350		
Canvasback	10	10	10	10	10	10	10	10	1,470	1	10
Scaup	20	20	20	20	10	10	10	10	4,305		15
Goldeneye											
Bufflehead									140		
Ruddy	30	30	30	40	40	40	40	40	2,730		15
Other											
Coots:	220	230	250	270	270	270	270	270	23,590	3	175

(over)

	(5) Total Days Use	(6) Peak Number	(7) Total Production
Swans			
Geese			
Ducks	69,335	710	~~185~~ 495
Coots	23,590	270	175

SUMMARY

Principal feeding areas Headquarters Lakes, South Marsh

Principal nesting areas South Marsh (west)

Reported by Marvin Mansfield, Refuge Manager

INSTRUCTIONS (See Secs. 7531 through 7534, Wildlife Refuges Field Manual)

(1) Species: In addition to the birds listed on form, other species occurring on refuge during the reporting period should be added in appropriate spaces. Special attention should be given to those species of local and national significance.

(2) Weeks of Reporting Period: Estimated average refuge populations.

(3) Estimated Waterfowl Days Use: Average weekly populations x number of days present for each species.

(4) Production: Estimated number of young produced based on observations and actual counts on representative breeding areas. Brood counts should be made on two or more areas aggregating 10% of the breeding habitat. Estimates having no basis in fact should be omitted.

(5) Total Days Use: A summary of data recorded under (3).

(6) Peak Number: Maximum number of waterfowl present on refuge during any census of reporting period.

(7) Total Production: A summary of data recorded under (4).

Interior Duplicating Section, Washington, D. C.
1953

3-1750
Form NP-1
(Rev rch 1953)

WATERFOWL

REFUGE Slade MONTHS OF September TO December, 19 68

(1) Species	(2) Weeks of reporting period: 9/1-7 (1)	9/8-14 (2)	9/15-21 (3)	9/22-28 (4)	9/29-10/5 (5)	10/6-12 (6)	10/13-19 (7)	10/20-26 (8)	10/27-11/2 (9)	11/3-9 (10)
Swans:										
Whistling					2			6	72	49
Trumpeter										
Geese:										
Canada (small)					13				6	
Cackling										
Brant										
White-fronted										
Snow										
Blue										
Other										
Ducks:										
Mallard	90	130	190	190	190	320	690	850	240	300
Black										
Gadwall	140	250	270	400	420	80	90	100	20	
Baldpate	120	240	280	280	240	180	180	180	140	
Pintail	20	40	150	130	60	60	70	70	10	
Green-winged teal		10	10	10	30	45	40	30	30	
Blue-winged teal	130	70	50	40	30	10	10			
Cinnamon teal										
Shoveler	20	20	20	10	10	15	20	30	5	
Wood										
Redhead	10	90	25	30	15	350	290	230	70	
Ring-necked		5	5	40	70	90	110	130	120	
Canvasback	10	30	10	20	45	45	50	55	40	
Scaup	10	15	10	20	60	100	80	50	810	5
Goldeneye										
Bufflehead			10	5	5	30	30	40	40	5
Ruddy	50	60	50	25	15	15	10	10	10	
Other										
Coot:	940	1,060	1,050	1,420	1,010	510	360	20	10	

Int. Dup. Sec., Wash., D.C. 37944

3-1750a
C NR-1
(Rev. March 1953)

WATER FOWL
(Continuation Sheet)

REFUGE Slade MONTHS OF September TO December, 19 68

(1) Species	(2) Weeks of reporting period: 11/10-16 11/17-23 11/24-30 12/1-7								(3) Estimated waterfowl days use	(4) Production: Broods seen	(4) Production: Estimated total
	11	12	13	14	15	16	17	18			
Swans:											
Whistling									903		
Trumpeter											
Geese:											
Canada									133		
Cackling											
Brant											
White-fronted											
Snow											
Blue											
Other											
Ducks:											
Mallard	170	30	20	20					24,010		
Black											
Gadwall									12,390		
Baldpate									12,680		
Pintail									4,270		
Green-winged teal									1,435		
Blue-winged teal									2,300		
Cinnamon teal											
Shoveler									1,050		
Wood											
Redhead									7,770		
Ring-necked									3,990		
Canvasback									2,235		
Scaup									8,220		
Goldeneye											
Bufflehead									1,355		
Ruddy									1,725		
Other											
Coots:									55,000		

(over)

	(5) Total Days Use	(6) Peak Number	(7) Total Production
Swans	903	72	
Geese	133	13	
Ducks	83,300	1,775	
Coots	55,860	1,860	

SUMMARY

Principal feeding areas Harbor Lake, SE Slough, NW Slough

Principal nesting areas

Reported by Marvin Mansfield, Refuge Manager

INSTRUCTIONS (See Secs. 7531 through 7534, Wildlife Refuges Field Manual)

(1) Species: In addition to the birds listed on form, other species occurring on refuge during the reporting period should be added in appropriate spaces. Special attention should be given to those species of local and national significance.

(2) Weeks of Reporting Period: Estimated average refuge populations.

(3) Estimated Waterfowl Days Use: Average weekly populations x number of days present for each species.

(4) Production: Estimated number of young produced based on observations and actual counts on representative breeding areas. Brood counts should be made on two or more areas aggregating 10% of the breeding habitat. Estimates having no basis in fact should be omitted.

(5) Total Days Use: A summary of data recorded under (3).

(6) Peak Number: Maximum number of waterfowl present on refuge during any census of reporting period.

(7) Total Production: A summary of data recorded under (4).

Interior Duplicating Section, Washington, D. C.
1953

3-1751
Form NR
(Nov. 1945)

MIGRATOR BIRDS
(other than waterfowl)

Refuge Slade Months of January to April 1968

(1) Species	(2) First Seen		(3) Peak Numbers		(4) Last Seen		(5) Production			(6) Total
Common Name	Number	Date	Number	Date	Number	Date	Number Colonies	Total # Nests	Total Young	Estimated Number
I. Water and Marsh Birds:										
White pelican	50	4/22	50	4/22						75
Double-crested cormorant	1	4/15	7	4/25						10
Sandhill crane	Many*	4/10	Many*	4/10-11						3,000*
II. Shorebirds, Gulls and Terns:										
Herring gull	1	3/19	15	4/1						20
Ring-billed gull	3	3/16	70	4/5						150
Franklin's gull	25	4/19	25	4/19						50
Marbled godwit	1	4/21	1	4/21						3
Killdeer	1	3/29	1	3/29						3

*Migrating

(over)

(1)	(2)		(3)		(4)	(5)	(6)
III. Doves and Pigeons:							
Mourning dove	1	4/26	1	4/26			1
White-winged dove							
IV. Predaceous Birds:							
Golden eagle	1	2/27	1	2/27			2
Duck hawk							
Horned owl	1 - 2	Present throughout the period					
Magpie							
Raven							
Crow	1	3/6	100	3/29			500
Bald eagle	1	3/30	1	3/30			1
Snowy owl	1	1/15	1	1/15			1
Marsh hawk	1	3/10	3	4/14			10
Rough-legged hawk	1	3/26	2	4/20			5
Sparrow hawk	1	4/21	1	4/21			5
Northern shrike	1	1/24	1	1/24			1

Reported by Marvin Mansfield, Refuge Manager

INSTRUCTIONS

(1) Species: Use the correct names as found in the A.O.U. Checklist, 1931 Edition, and list group in A.O.U order. Avoid general terms as "seagull", "tern", etc. In addition to the birds listed on form, other species occurring on refuge during the reporting period should be added in appropriate spaces. Special attention should be given to those species of local and National significance. Groups: I. Water and Marsh Birds (Gaviiformes to Ciconiiformes and Gruiiforme
II. Shorebirds, Gulls and Terns (Charadriiformes)
III. Doves and Pigeons (Columbiformes)
IV. Predaceous Birds (Falconiformes, Strigiformes and predaceous Passeriformes)

(2) First Seen: The first refuge record for the species for the season concerned.

(3) Peak Numbers: The greatest number of the species present in a limited interval of time.

(4) Last Seen: The last refuge record for the species during the season concerned.

(5) Production: Estimated number of young produced based on observations and actual counts.

Total: Estimated to . number of the spe s using the re: e during the period concerned.

INT.-DUP. SEC., WASH., D.C.

3-1751
Form NR-
(Nov. 1945)

MIGRATORY BIRDS
(other than waterfowl)

Refuge Slade Months of May to August 1968

(1) Species	(2) First Seen		(3) Peak Numbers		(4) Last Seen		(5) Production			(6) Total
Common Name	Number	Date	Number	Date	Number	Date	Number Colonies	Total # Nests	Total Young	Estimated Number
I. Water and Marsh Birds:										
Eared Grebe	1	5/4	4	6/10					5	20
Pied-billed grebe	2	5/12	50	8/30					35	75
White pelican			25	7/18						40
Double-crested cormorant			70	8/24						80
Great blue heron	1	5/17	2	6/1						5
Black-crowned night heron	1	5/21	9	5/23						15
American bittern	2	5/21	7	5/23						10
Sandhill crane			4	7/19						4
II. Shorebirds, Gulls and Terns:										
Herring gull			15	5/6						25
Ring-billed gull			60	6/20						90
Franklin's gull			170	8/30						210
Marbled godwit			2	6/27						5
Killdeer			4	7/16					2	15
Common tern	3	5/17	14	7/2						40
Black tern	7	5/22	25	6/30						50

(over)

(1)	(2)		(3)		(4)	(5)	(6)
III. Doves and Pigeons:							
Mourning dove			70	August		45	160
White-winged dove							
IV. Predaceous Birds:							
Golden eagle							
Duck hawk							
Horned owl							
Magpie							
Raven							
Crow							
Marsh Hawk			5	7/11			10
Swainson's hawk	2	5/21	5	7/17		3	5

Reported by Marvin Mansfield

INSTRUCTIONS

(1) Species: Use the correct names as found in the A.O.U. Checklist, 1931 Edition, and list group in A.O.U order. Avoid general terms as "seagull", "tern", etc. In addition to the birds listed on form, other species occurring on refuge during the reporting period should be added in appropriate spaces. Special attention should be given to those species of local and National significance. Groups: I. Water and Marsh Birds (Gaviiformes to Ciconiiformes and Gruiiforme
II. Shorebirds. Gulls and Terns (Charadriiformes)
III. Doves and Pigeons (Columbiformes)
IV. Predaceous Birds (Falconiformes, Strigiformes and predaceous Passeriformes)

(2) First Seen: The first refuge record for the species for the season concerned.

(3) Peak Numbers: The greatest number of the species present in a limited interval of time.

(4) Last Seen: The last refuge record for the species during the season concerned.

(5) Production: Estimated number of young produced based on observations and actual counts.

Total: Estimated to number of the spe s using the re e during the period concerned.

3-1751
Form NR-1A
(Nov. 1945)

MIGRATORY BIRDS
(other than waterfowl)

Refuge Slade Months of September to December 1968

(1) Species	(2) First Seen		(3) Peak Numbers		(4) Last Seen		(5) Production			(6) Total
Common Name	Number	Date	Number	Date	Number	Date	Number Colonies	Total # Nests	Total Young	Estimated Number
I. Water and Marsh Birds:										
Western Grebe			22	9/13	2	10/21				40
Pied-billed Grebe			47	9/9	2	10/31				75
White Pelican			20	9/9	4	9/20				30
Double-crested cormorant			95	9/9	10	9/30				110
Great blue heron			1	9/20,10/21	1	10/21				2
Black-crowned night heron			3	9/13	2	9/20				5
American Bittern			1	10/21	1	10/21				2
Sandhill crane*			9,800	10/7	80	11/16				15,500
II. Shorebirds, Gulls and Terns:										
Herring gull			5	10/4	1	10/21				20
Ring-billed gull			14	10/10	10	10/21				40
Franklin's gull			140	9/13	4	9/20				350
Common tern			4	9/13	4	9/13				25
Killdeer			2	9/30	2	9/30				5

(over)

*Horsehead and Kunkle Lake Areas.

(1)	(2)		(3)		(4)		(5)	(6)
III. Doves and Pigeons:								
Mourning dove			70	9/1	2	9/30		160
White-winged dove								
IV. Predaceous Birds:								
Golden eagle	1	11/13	1	11/13	1	11/13		1
Duck hawk			2 - 3 present throughout period					5
Horned owl								
Magpie								
Raven			45	9/30	2	10/4		100
Crow			1	9/20	1	9/20		3
Red-tailed hawk			1	9/30	1	9/30		2
Rough-legged hawk			5	9/13	4	10/21		15
Marsh hawk			2	12/26	2	12/26		4
Short-eared owl								

Reported by Marvin Mansfield

INSTRUCTIONS

(1) Species: Use the correct names as found in the A.O.U. Checklist, 1931 Edition, and list group in A.O.U. order. Avoid general terms as "seagull", "tern", etc. In addition to the birds listed on form, other species occurring on refuge during the reporting period should be added in appropriate spaces. Special attention should be given to those species of local and National significance. Groups: I. Water and Marsh Birds (Gaviiformes to Ciconiiformes and Gruiiformes)
II. Shorebirds, Gulls and Terns (Charadriiformes)
III. Doves and Pigeons (Columbiformes)
IV. Predaceous Birds (Falconiformes, Strigiformes and predaceous Passeriformes)

(2) First Seen: The first refuge record for the species for the season concerned.

(3) Peak Numbers: The greatest number of the species present in a limited interval of time.

(4) Last Seen: The last refuge record for the species during the season concerned.

(5) Production: Estimated number of young produced based on observations and actual counts.

(6) Total: Estimated total number of the species using the refuge during the period concerned.

INT.-DUP. SEC., WASH., D.C.

59317

3-1750b
Form NR-1B
(Rev. Nov. 1957)

UNITED STATES
DEPARTMENT OF THE INTERIOR
FISH AND WILDLIFE SERVICE
BUREAU OF SPORT FISHERIES AND WILDLIFE

WATERFOWL UTILIZATION OF REFUGE HABITAT

Refuge Slade — For 12-month period ending August 31, 1968

Reported by Marvin Mansfield — Title Refuge Manager

(1) Area or Unit Designation	(2) Habitat Type	(2) Habitat Acreage	(3)	(3) Use-days	(4) Breeding Population	(5) Production
I	Crops	70	Ducks	40,369	90	80
	Upland	435	Geese			
	Marsh	15	Swans			
	Water	80	Coots	41,923	50	60
	Total	600	Total	82,292	140	140
II	Crops	10	Ducks	69,237	100	90
	Upland	410	Geese			
	Marsh	10	Swans	1,043		
	Water	70	Coots	506	20	22
	Total	500	Total	70,826	120	112
III	Crops	100	Ducks	73,178	170	150
	Upland	660	Geese	1,774		
	Marsh	110	Swans	1,267		
	Water	365	Coots	4,914	30	33
	Total	1,235	Total	81,130	200	183
IV	Crops	135	Ducks	41,116	190	165
	Upland	315	Geese			
	Marsh	130	Swans			
	Water	85	Coots	22,162	50	60
	Total	665	Total	63,300	240	225
TOTALS	Crops	315	Ducks	223,930	550	485
	Upland	1,820	Geese	1,771		
	Marsh	265	Swans	2,310		
	Water	600	Coots	69,505	150	175
	Total	3,000	Total	297,556	700	660
	Crops		Ducks			
	Upland		Geese			
	Marsh		Swans			
	Water		Coots			
	Total		Total			
	Crops		Ducks			
	Upland		Geese			
	Marsh		Swans			
	Water		Coots			
	Total		Total			

(over)

INSTRUCTIONS

All tabulated information should be based on the best available techniques for obtaining these data. Estimates having no foundation in fact must be omitted. Refuge grand totals for all categories should be provided in the spaces below the last unit tabulation. Additional forms should be used if the number of units reported upon exceeds the capacity of one page. This report embraces the preceding 12-month period, NOT the fiscal or calendar year, and is submitted annually with the May-August Narrative Report.

(1) **Area or Unit:** A geographical unit which, because of size, terrain characteristics, habitat type and current or anticipated management practices, may be considered an entity apart from other areas in the refuge census pattern. The combined estimated acreages of all units should equal the total refuge area. A detailed map and accompanying verbal description of the habitat types of each unit should be forwarded with the initial report for each refuge, and thereafter need only be submitted to report changes in unit boundaries or their descriptions.

(2) **Habitat:** Crops include all cultivated croplands such as cereals and green forage, planted food patches and agricultural row crops; upland is all uncultivated terrain lying above the plant communities requiring seasonal submergence or a completely saturated soil condition a part of each year, and includes lands whose temporary flooding facilitates use of non-aquatic type foods; marsh extends from the upland community to, but not including, the water type and consists of the relatively stable marginal or shallow-growing emergent vegetation type, including wet meadow and deep marsh; and in the water category are all other water areas inundated most or all of the growing season and extending from the deeper edge of the marsh zone to strictly open-water, embracing such habitat as shallow playa lakes, deep lakes and reservoirs, true shrub and tree swamps, open flowing water and maritime bays, sounds and estuaries. Acreage estimates for all four types should be computed and kept as accurate as possible through reference to available maps supplemented by periodic field observations. The sum of these estimates should equal the area of the entire unit.

(3) **Use-days:** Use-days is computed by multiplying weekly waterfowl population figures by seven, and should agree with information reported on Form MR-1.

(4) **Breeding Population:** An estimate of the total breeding population of each category of birds for each area or unit.

(5) **Production:** Estimated total number of young raised to flight age.

Interior Duplicating Section, Washington, D. C. 27580

3-1752
Form NR-2
(April 1946)

UPLAND GAME BIRDS

Refuge Slade Months of January to April, 1968

(1) Species	(2) Density	(3) Young Produced			(4) Sex Ratio	(5) Removals			(6) Total	(7) Remarks
Common Name	Cover types, total acreage of habitat	Acres Per Bird	Number broods observed	Estimated Total	Percentage	Hunting	For Re-stocking	For Research	Estimated number using Refuge	Pertinent information not specifically requested. List introductions here.
Ring-necked pheasant	Crop - 300 acres Grass and marsh - 2,100 acres	120			50:50				20	
Sharp-tailed grouse	" " "	40			50:50				60	
Gray partridge	" " "	120			50:50				20	

INSTRUCTIONS

Form NR-2 - UPLAND GAME BIRDS*

(1) SPECIES: Use correct common name.

(2) DENSITY: Applies particularly to those species considered in removal programs (public hunts,etc.). Detailed data may be omitted for species occurring in limited numbers. Density to be expressed in acres per animal by cover types. This information is to be prefaced by a statement from the refuge manager as to the number of acres in each cover type found on the refuge; once submitted, this information need not be repeated except as significant changes occur in the area of cover types. Cover types should be detailed enough to furnish the desired information but not so much as to obscure the general picture. Examples: spruce swamp, upland hardwoods, reverting agriculture land, bottomland hardwoods, short grass prairie, etc. Standard type symbols listed in Wildlife Management Series No. 7 should be used where possible. Figures submitted should be based on actual observations and counts on representative sample areas. Survey method used and size of sample area or areas should be indicated under Remarks.

(3) YOUNG PRODUCED: Estimated number of young produced, based upon observations and actual counts in representative breeding habitat.

(4) SEX RATIO: This column applies primarily to wild turkey, pheasants, etc. Include data on other species if available.

(5) REMOVALS: Indicate total number in each category removed during the report period.

(6) TOTAL: Estimated total number using the refuge during the report period. This may include resident birds plus those migrating into the refuge during certain seasons.

(7) REMARKS: Indicate method used to determine population and area covered in survey. Also include other pertinent information not specifically requested.

*Only columns applicable to the period covered should be used.

3-175c
Form NR-2
(April 1946)

UPLAND GAME BIRDS

Refuge Slade Months of May to August, 19 68

(1) Species	(2) Density	(3) Young Produced			(4) Sex Ratio	(5) Removals			(6) Total	(7) Remarks
Common Name	Cover types, total acreage of habitat	Acres Per Bird	Number broods observed	Estimated Total	Percentage	Hunting	For Re-stocking	For Research	Estimated number using Refuge	Pertinent information not specifically requested. List introductions here.
ing-necked pheasant	Crop - 300 Ac. Grass and Marsh - 2,100 Ac.	80	1	15	50:50				30	
harp-tailed grouse	" " "	53	2	25	50:50				45	
ray partridge	" " "	80	1	20	50:50				30	

INSTRUCTIONS

Form NR-2 - UPLAND GAME BIRDS*

(1) SPECIES: Use correct common name.

(2) DENSITY: Applies particularly to those species considered in removal programs (public hunts, etc.). Detailed data may be omitted for species occurring in limited numbers. Density to be expressed in acres per animal by cover types. This information is to be prefaced by a statement from the refuge manager as to the number of acres in each cover type found on the refuge; once submitted, this information need not be repeated except as significant changes occur in the area of cover types. Cover types should be detailed enough to furnish the desired information but not so much as to obscure the general picture. Examples: spruce swamp, upland hardwoods, reverting agriculture land, bottomland hardwoods, short grass prairie, etc. Standard type symbols listed in Wildlife Management Series No. 7 should be used where possible. Figures submitted should be based on actual observations and counts on representative sample areas. Survey method used and size of sample area or areas should be indicated under Remarks.

(3) YOUNG PRODUCED: Estimated number of young produced, based upon observations and actual counts in representative breeding habitat.

(4) SEX RATIO: This column applies primarily to wild turkey, pheasants, etc. Include data on other species if available.

(5) REMOVALS: Indicate total number in each category removed during the report period.

(6) TOTAL: Estimated total number using the refuge during the report period. This may include resident birds plus those migrating into the refuge during certain seasons.

(7) REMARKS: Indicate method used to determine population and area covered in survey. Also include other pertinent information not specifically requested.

*Only columns applicable to the period covered should be used.

3-17
Form NR-2
(April 1946)

UPLAND GAME BIRDS

1613

Refuge Slade Months of September to December, 1968

(1) Species	(2) Density		(3) Young Produced		(4) Sex Ratio	(5) Removals			(6) Total	(7) Remarks
Common Name	Cover types, total acreage of habitat	Acres per Bird	Number broods obs'v'd.	Estimated Total	Percentage	Hunting	For Re-stocking	For Research	Estimated number using Refuge	Pertinent information not specifically requested. List introductions here.
Ring-necked pheasant	Crop - 300 Ac. Grass and Marsh - 2,100 Ac.	96			50:50				25	
Sharp-tailed grouse	" "	32			50:50				75	
Gray partridge	" "	120			50:50				20	

INSTRUCTIONS

Form NR-2 - UPLAND GAME BIRDS.*

(1) SPECIES: Use correct common name.

(2) DENSITY: Applies particularly to those species considered in removal programs (public hunts, etc.). Detailed data may be omitted for species occurring in limited numbers. Density to be expressed in acres per animal by cover types. This information is to be prefaced by a statement from the refuge manager as to the number of acres in each cover type found on the refuge; once submitted, this information need not be repeated except as significant changes occur in the area of cover types. Cover types should be detailed enough to furnish the desired information but not so much as to obscure the general picture. Examples: spruce swamp, upland hardwoods, reverting agriculture land, bottomland hardwoods, short grass prairie, etc. Standard type symbols listed in Wildlife Management Series No. 7 should be used where possible. Figures submitted should be based on actual observations and counts on representative sample areas. Survey method used and size of sample area or areas should be indicated under Remarks.

(3) YOUNG PRODUCED: Estimated number of young produced, based upon observations and actual counts in representative breeding habitat.

(4) SEX RATIO: This column applies primarily to wild turkey, pheasants, etc. Include data on other species if available.

(5) REMOVALS: Indicate total number in each category removed during the report period.

(6) TOTAL: Estimated total number using the refuge during the report period. This may include resident birds plus those migrating into the refuge during certain seasons.

(7) REMARKS: Indicate method used to determine population and area covered in survey. Also include other pertinent information not specifically requested.

* Only columns applicable to the period covered should be used.

3-17[illegible]
Form [illegible]R-3
(June 1945)

BIG [illegible]ME

Refuge Slade Calendar Year 1968

(1) Species	(2) Density	(3) Young Produced	(4) Removals				(5) Losses			(6) Introductions		(7) Estimated Total Refuge Population		(8) Sex Ratio
Common Name	Cover types, total Acreage of Habitat	Number	Hunting	For Re-stocking	Sold	For Research	Predation	Disease	Winter Loss	Number	Source	At period of Greatest use	As of Dec. 31	
White-tailed deer	Crop - 300 Acres, grass and marsh - 2,100 acres, trees and brush 50 acres	10	2				1*					20	10	1:4

Remarks:

*Auto

Reported by Marvin Mansfield

INSTRUCTIONS

Form NR-3 - BIG GAME

(1) SPECIES: Use correct common name; i.e., Mule deer, black-tailed deer, white-tailed deer. It is unnecessary to indicate sub-species such as northern or Louisiana white-tailed deer.

(2) DENSITY: Detailed data may be omitted for species occurring in limited numbers. Density to be expressed in acres per animal by cover types. This information is to be prefaced by a statement from the refuge manager as to the number of acres in each cover type found on the refuge; once submitted, this information need not be repeated except as significant changes occur in the area of cover types. Cover types should be detailed enough to furnish the desired information but not so much as to obscure the general picture. Examples: spruce swamp, upland hardwoods, reverting agriculture land, bottomland hardwoods, short grass prairie, etc. Standard type symbols listed in Wildlife Management Series No. 7 should be used where possible. Figures submitted should be based on actual observations and counts on representative sample areas. Survey method used and size of sample area or areas should be indicated under Remarks.

(3) YOUNG PRODUCED: Estimated total number of young produced on refuge.

(4) REMOVALS: Indicate total number in each category removed during the year.

(5) LOSSES: On the basis of known records or reliable estimates indicate total losses in each category during the year.

(6) INTRODUCTIONS: Indicate the number and refuge or agency from which stock was secured.

(7) TOTAL REFUGE POPULATION: Give the estimated population of <u>each</u> <u>species</u> on the refuge at period of its greatest abundance and also as of Dec. 31.

(8) SEX RATIO: Indicate the percentage of males and females of each species as determined from field observations or through removals.

3-1754
Form NK-4
(June 1945)

SMALL MAMM[illegible]

Refuge Slade Year ending April 30, 1968

(1) *Species	(2) Density		(3) Removals					(4) Disposition of Furs						(5)
								Share Trapping						
Common Name	Cover Types & Total Acreage of Habitat	Acres Per Animal	Hunting	Fur Harvest	Predator Control *	For Re-stocking	For Re-search	Permit Number	Trappers Share	Refuge share	Total Refuge Furs Shipped	Furs Donated	Furs Destroyed	Total Population
Mink				None				None						6
Weasel (long-tailed)				None										6
Muskrat				None										10
Raccoon					23									10
Striped skunk					11									10
Spotted skunk					1									0
Red fox					4									10
Badger					None									5

* List removals by ~~Predator Animal Hunter~~ Refuge Personnel

REMARKS:

Reported by Marvin Mansfield, Refuge Manager

INSTRUCTIONS

Form NR-4 - SMALL MAMMALS (Include data on all species of importance in the management program; i. e., muskrats, beaver, coon, mink, coyote. Data on small rodents may be omitted except for estimated total population of each species considered in control operations.)

(1) SPECIES: Use correct common name. Example: Striped skunk, spotted skunk, short-tailed weasel, gray squirrel, fox squirrel, white-tailed jackrabbit, etc. (Accepted common names in current use are found in the "Field Book of North American Mammals" by H. E. Anthony and the "Manual of the Vertebrate Animals of the Northeastern United States" by David Starr Jordan.)

(2) DENSITY: Applies particularly to those species considered in removal programs. Detailed data may be omitted for species occurring in limited numbers. Density to be expressed in acres per animal by cover types. This information is to be prefaced by a statement from the refuge manager as to the number of acres in each cover type found on the refuge; once submitted, this information need not be repeated except as significant changes occur in the area of cover types. Cover types should be detailed enough to furnish the desired information but not so much as to obscure the general picture. Examples: spruce swamp, upland hardwoods, reverting agriculture land, bottom land hardwoods, short grass prairie, etc. Standard type symbols listed in Wildlife Management Series No. 7 should be used where possible. Figures submitted should be based on actual observations and counts on representative sample areas. Survey method used and size of sample area or areas should be indicated under Remarks.

(3) REMOVALS: Indicate the total number under each category removed since April 30 of the previous year, including any taken on the refuge by Service Predatory Animal Hunter. Also show any removals not falling under headingslisted.

(4) DISPOSITION OF FUR: On share-trapped furs list the permit number, trapper's share, and refuge share. Indicate the number of pelts shipped to market, including furs taken by Service personnel. Total number of pelts of each species destroyed because of unprimeness or damaged condition, and furs donated to institutions or other agencies should be shown in the column provided.

(5) TOTAL POPULATION: Estimated total population of each species reported on as of April 30.

REMARKS: Indicate inventory method(s) used, size of sample area(s), introductions, and any other pertinent information not specifically requested.

116007

3-1[illegible]5
Form NR-5

DISEASE

Refuge Slade Year 19 68

Botulism None

Lead Poisoning or other Disease None

Period of outbreak _____

Period of heaviest losses _____

Losses:

	Actual Count	Estimated
(a) Waterfowl		
(b) Shorebirds		
(c) Other		

Number Hospitalized	No. Recovered	% Recovered
(a) Waterfowl		
(b) Shorebirds		
(c) Other		

Areas affected (location and approximate acreage) _____

Water conditions (average depth of water in sickness areas, reflooding of exposed flats, etc.

Condition of vegetation and invertebrate life _____

Remarks _____

Kind of disease _____

Species affected _____

Number Affected Species	Actual Count	Estimated

Number Recovered _____

Number lost _____

Source of infection _____

Water conditions _____

Food conditions _____

Remarks _____

INT.-DUP., D.C.- 53818-59

(1)

3-1757
Form NR-1
(Rev. June 1960)

NONAGRICULTURAL COLLECTIONS, RECEIPTS, AND PLANTINGS

Refuge Slade Year 1968

Species	Collections and Receipts (Seeds, rootstocks, trees, shrubs)						Plantings (Marsh - Aquatic - Upland)						
	Amount (Lbs., bus., etc.)	(2) C or R	Date	Method or Source	Cost	(3) Total Amount on Hand	Location of Area Planted	Rate of Seeding or Planting	Amount Planted (Acres or Yards of Shoreline)	Amount and Nature of Propagules	Date	Survival	Cause of Loss
Eastern Red Cedar	500 seedlings	R	5/13	Purchase	$20.00	None	NW Slough shelterbelt	500/Ac.	1 Ac.	500 (seedlings)	5/13	90%	?

(1) Report agronomic farm crops on Form NR-8
(2) C = Collections and R = Receipts
(3) Use "S" to denote surplus

Total acreage planted:
Marsh and aquatic _____
Hedgerows, cover patches _____
Food strips, food patches _____
Forest plantings 1 Acre

Remarks: _____

3-1758
Form NR-8
(Rev. Jan. 1956)

Fish and Wildlife Service Branch of Wildlife Refuges

CULTIVATED CROPS - HAYING - GRAZING

Refuge Slade County Kidder State North Dakota

Cultivated Crops Grown	Permittee's Share Harvested		Government's Share or Return				Total Acreage Planted	Green Manure, Cover and Waterfowl Browsing Crops Type and Kind	Total Acreage
			Harvested		Unharvested				
	Acres	Bu./Tons	Acres	Bu./Tons	Acres	Bu./Tons			
Wheat	97.4	877 bu.					97.4	Alfalfa	35.1
Oats	66.4	2324 bu.					66.4	Sweet Clover	26.3
Barley	3.0	80 bu.	29.3	775 bu.			32.3		
Corn					34.0	510 bu.	34.0		
								Fallow Ag. Land	9.0

No. of Permittees: Agricultural Operations 2 Haying Operations 0 Grazing Operations 4

Hay - Improved (Specify Kind)	Tons Harvested	Acres	Cash Revenue	GRAZING	Number Animals	AUM'S	Cash Revenue	ACREAGE
				1. Cattle	148	382.44	936.98	745
				2. Other	None			
				1. Total Refuge Acreage Under Cultivation				300
Hay - Wild				2. Acreage Cultivated as Service Operation				2.5

DIRECTIONS FOR PREPARING FORM NR-8
CULTIVATED CROPS - HAYING - GRAZING

Report Form NR-8 should be prepared on a calendar-year basis for all crops which were planted during the calendar year and for haying and grazing operations carried on during the same period.

Separate reports shall be furnished for Refuge lands in each county when a refuge is located in more than one county or State.

Cultivated Crops Grown - List all crops planted, grown and harvested on the refuge during the reporting period regardless of purpose. Crops in kind which have been planted by more than one permittee or this Service shall be combined for reporting purposes.

Permittee's Share - Only the number of acres utilized by the permittee for his own benefit should be shown under the Acres column, and only the number of bushels of farm crops harvested by the permittee for himself should be shown under the Bushels Harvested column. Report all crops harvested in bushels or fractions thereof except such crops as silage, watermelons, cotton, tobacco, and hay, which should be reported in tons or fractions thereof.

Government's Share or Return - Harvested - Show the acreage and number of bushels harvested for the Government of crops produced by permittees or refuge personnel. Unharvested - Show the exact acreage and the estimated number of bushels of grain available for wildlife. If grazing is made available to waterfowl through the planting of grain, cover, green manure, grazing or hay crops, estimate the tonnage of green food produced or utilized and report under Bushels Unharvested column.

Total Acreage Planted - Report all acreage planted, including crop failures.

Green Manure, Cover and Waterfowl Grazing Crops - Specify the acreage, kind and purpose of the crop. These crops and the acreage may be duplicated under cultivated crops if planted during the year, or a duplication may occur under hay if the crop results from a perennial planting.

Hay - Improved - List separately the kinds of improved hay grown. Annual plantings should also be reported under Cultivated Crops, and perennial hay should be listed in the same manner at time of planting.

Total Refuge Acreage Under Cultivation - Report total land area devoted to agricultural purposes during the year.

INT.-DUP. SEC., WASH., D.C. 91767

3-1758
Form NR-8
(Rev. Jan. 1956)

Fish and Wildlife Service Branch of Wildlife Refuges

CULTIVATED CROPS - HAYING - GRAZING

Refuge Florence Lake County Burleigh State North Dakota

Cultivated Crops Grown	Permittee's Share Harvested		Government's Share or Return				Total Acreage Planted	Green Manure, Cover and Water-fowl Browsing Crops Type and Kind	Total Acreage
			Harvested		Unharvested				
	Acres	Bu./Tons	Acres	Bu./Tons	Acres	Bu./Tons			
Wheat	30.2	332 bu.					30.2	Sweet Clover	7
Corn					11.2	55 bu.	11.2		
								Fallow Ag. Land	21.2

No. of Permittees: Agricultural Operations 1 Haying Operations None Grazing Operations 2

Hay - Improved (Specify Kind)	Tons Harvested	Acres	Cash Revenue	GRAZING	Number Animals	AUM'S	Cash Revenue	ACREAGE
				1. Cattle	107	257.80	$631.61	960
				2. Other				
				1. Total Refuge Acreage Under Cultivation				69.6
Hay - Wild				2. Acreage Cultivated as Service Operation				None

DIRECTIONS FOR PREPARING FORM NR-8
CULTIVATED CROPS - HAYING - GRAZING

Report Form NR-8 should be prepared on a calendar-year basis for all crops which were planted during the calendar year and for haying and grazing operations carried on during the same period.

Separate reports shall be furnished for Refuge lands in each county when a refuge is located in more than one county or State.

Cultivated Crops Grown - List all crops planted, grown and harvested on the refuge during the reporting period regardless of purpose. Crops in kind which have been planted by more than one permittee or this Service shall be combined for reporting purposes.

Permittee's Share - Only the number of acres utilized by the permittee for his own benefit should be shown under the Acres column, and only the number of bushels of farm crops harvested by the permittee for himself should be shown under the Bushels Harvested column. Report all crops harvested in bushels or fractions thereof except such crops as silage, watermelons, cotton, tobacco, and hay, which should be reported in tons or fractions thereof.

Government's Share or Return - Harvested - Show the acreage and number of bushels harvested for the Government of crops produced by permittees or refuge personnel. Unharvested - Show the exact acreage and the estimated number of bushels of grain available for wildlife. If grazing is made available to waterfowl through the planting of grain, cover, green manure, grazing or hay crops, estimate the tonnage of green food produced or utilized and report under Bushels Unharvested column.

Total Acreage Planted - Report all acreage planted, including crop failures.

Green Manure, Cover and Waterfowl Grazing Crops - Specify the acreage, kind and purpose of the crop. These crops and the acreage may be duplicated under cultivated crops if planted during the year, or a duplication may occur under hay if the crop results from a perennial planting.

Hay - Improved - List separately the kinds of improved hay grown. Annual plantings should also be reported under Cultivated Crops, and perennial hay should be listed in the same manner at time of planting.

Total Refuge Acreage Under Cultivation - Report total land area devoted to agricultural purposes during the year.

INT.-DUP. SEC., WASH., D.C. 91767

3-1570
NR-8a

REFUGE GRAIN REPORT

Refuge Slade Months of January thru December 1968

(1) VARIETY	(2) ON HAND BEGINNING OF PERIOD	(3) RECEIVED DURING PERIOD	(4) TOTAL	(5) GRAIN DISPOSED OF				(6) ON HAND END OF PERIOD	(7) PROPOSED USE		
				TRANS-FERRED	SEEDED	FED	TOTAL		SEED	FEED	SURP.
Barley	65 bu.	991 bu.	1,056 bu.			369 bu.	369 bu.	687 bu.		687 bu.	
Wheat	100 bu.	None	100 bu.			100 bu.	100 bu.	None			

(8) Indicate shipping or collection points

(9) Grain is stored at Slade Refuge

(10) Remarks

NR-8a REFUGE GRAIN REPORT

This report should cover all grain on hand, received, or disposed of, during the period covered by this narrative report.

Report all grain in bushels. For the purpose of this report the following approximate weights of grain shall be considered equivalent to a bushel: Corn (shelled)--55 lbs., Corn (ear)--70 lbs., Wheat--60 lbs., Barley--50 lbs., Rye--55 lbs., Oats--30 lbs., Soy Beans--60 lbs., Millet--50 lbs., Cowpeas--60 lbs., and Mixed--50 lbs. In computing volume of granaries, multiply the cubic contents (cu. ft.) by 0.8 bushels.

(1) List each type of grain separately: Corn, wheat, proso millet, etc. Include only domestic grains; aquatic and other seeds will be listed on NR-9.

(3) Report all grain received during period from all sources, such as transfer, share-cropping, or harvest from food patches.

(4) A total of Columns 2 and 3.

(6) Column 4 less Column 5.

(7) This is a proposed breakdown by varieties of grain listed in Column 6.

(8) Nearest railroad station for shipping and receiving.

(9) Where stored on refuge: "Headquarters grainary", etc.

(10) Indicate here the source of grain shipped in, destination of grain transferred, data on condition of grain, unusual uses proposed.

3-1979 (NR-12)
(9/63)

Bureau of Sport Fisheries and Wildlife

ANNUAL REPORT OF PERSTICIDE APPLICATION

Refuge: Slade

Proposal Number:

Reporting Year: 1968

INSTRUCTIONS: Wildlife Refuges Manual, secs, 3252d, 3394b and 3395.

* Date(s) of Application	List of Target Pest(s)	Location of Area Treated	Total Acres Treated	Chemical(s) Used	Total Amount of Chemical Applied	Application Rate	Carrier and Rate	Method of Application
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
5/29	Leafy Spurge	11 scattered patches ranging in size from 7 sq. ft. to 491 sq. ft.	0.08	Tordon	3/4 pint	4.5 lbs./Ac.	Water 100 gal/ac.	Hand Pump
6/18	Poison Ivy	Recreation Area	0.25	Trysben 200	1 pint	½ lb./Ac.	Water 25 gal/ac.	Hand Pump
7/17	Leafy Spurge	9 scattered patches ranging in size from 12 sq. ft. to 707 sq. ft.	0.06	Tordon	½ pint	4 lbs./Ac.	Water 100 gal/ac.	Hand Pump

10. Summary of results (continue on reverse side, if necessary)

(a) First years results: (spurge)

1.	Date and amount of first rainfall	1. 6/5 .65"
2.	Date of first observation	2. 6/11
3.	Date of first effects noted	3. 6/11
4.	Character of symptoms	4. Plants wilted and brown
5.	Date of examination and percent of apparent kill	5. 7/8 100%
6.	Date of follow-up observation and percent regrowth	6. 8/12 10%
7.	Date of examination and percent of real kill	7. 8/12 90%
8.	Cost of chemical, equipment, labor: total and per acre cost	8. $5.25; $5.75; $10.50 — total $21.50 or $268.75/acre

3550

First years results: (poison ivy)

1.	Date and amount of first rainfall	1. 6/21 .25"
2.	Date of first observation	2. 6/24
3.	Date first effects noted	3. 6/24
4.	Character of symptoms	4. Yellow and shrivelled leaves
5.	Date of examination and percent of apparent kill	5. 7/2 95%
6.	Date of follow-up observation and percent regrowth	6. 7/29 10%
7.	Date of examination and percent of real kill	7. 7/29 90%
8.	Cost of chemical, equipment, labor: total and per acre cost	8. $1.13; $1.50; $2.50 — total $5.13 or $20.52/A.

DEPARTMENT OF THE INTERIOR

Fish and Wildlife Service Regional Information

BUREAU OF SPORT FISHERIES AND WILDLIFE

Slade National Wildlife Refuge
Dawson, North Dakota

WATERFOWL ARRIVE AT REFUGES

DAWSON -- Ducks and geese arrived at Slade and Long Lake National Wildlife Refuges two weeks earlier than normal. Seven mallards and 18 pintails were observed on Long Lake Refuge on March 5, and 100 Canada geese and seven mallards on Slade Refuge on March 6.

Refuge Manager Marvin Mansfield reports that in the past ten years the earliest arrival date had been March 13.

3/7/68
Sent to the following:
KFYR Radio Station, Bismarck
KFMR Radio Station, Bismarck
KBOM Radio Station, Mandan
The Bismarck Tribune, Bismarck
The Steele Ozone, Steele
The Emmons County Record, Linton
The Napoleon Homestead, Napoleon

Best possible image.

STEELE OZONE-PRESS, Steele, N Dak., Wed., March 13, 1968

WATERFOWL ARRIVE AT REFUGES

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— o O o —

EMMONS COUNTY RECORD

Linton, North Dakota 58552 Wednesday, March 13, 1968

Ducks, Geese Come Early This Year

Ducks and geese arrived at Slade and Long Lake National Wildlife Refuge, near Dawson, two weeks earlier than normal this year.

Seven mallards and 18 pintails were observed on Long Lake Refuge on March 5, and 100 Canada Geese and seven mallards on Slade Refuge on March 6.

Refuge Manager Marvin Mansfield reports that in the past ten years the earliest arrival date has been March 13.

Mansfield:327-6845

DEPARTMENT OF THE INTERIOR
Fish and Wildlife Service Regional Information

BUREAU OF SPORT FISHERIES AND WILDLIFE

Slade National Wildlife Refuge
Dawson, N.D.

To CHARGE FEES AT LAKE ISABEL

DAWSON -- Federal entrance fees will be charged at the Lake Isabel recreation area on Slade National Wildlife Refuge near Dawson. This is the second year for entrance fees reports refuge manager Marvin Mansfield.

The area is open to public use from May 15-Sept. 15 and gate hours will be from 8 a.m. to 10 p.m. CDT.

Entrance permits may be obtained at the Slade Refuge headquarters, two miles south and two miles east of Dawson. Admission will be by the $7 Golden Eagle passport good for the entire season at all U.S. Fee Areas, a $1 daily permit or a 50 cent walk-in permit. Persons under 16 are admitted free.

Only the federal refuge on the east side of the lake is in the fee area. Persons who use Lake Isabel without going into the refuge will not be required to pay.

5/9/68

Sent to: Steele Ozone, Bismarck Tribune, Napoleon Homestead

DEPARTMENT OF THE INTERIOR

Fish and Wildlife Service Regional Information

BUREAU OF SPORT FISHERIES AND WILDLIFE

Slade National Wildlife Refuge
Dawson, North Dakota

COUNTIES RECEIVE MONEY FOR FEDERAL LANDS

DAWSON -- Checks were recently distributed to the five counties which have Federal lands administered from Slade National Wildlife Refuge at Dawson. These lands consist of Waterfowl Production Areas and National Wildlife Refuges.

Refuge Manager Marvin Mansfield reports four of the five counties received an increase over 1967. This resulted from an increase in land acquired for wildlife purposes.

The County check amounted to $. Mr. Mansfield said the funds must be used solely for the benefit of public schools and roads.

Counties		Sent to	Date
Burleigh -	$ 2,347.70	Bismarck Tribune, Bismarck, N. D.	10/19/68
Emmons -	716.55	Emmons County Record, Linton, N. D.	10/16/68
Kidder -	2,110.18	Steele Ozone, Steele, N. D.	10/16/68
Logan -	736.71	Napoleon Homestead, Napoleon, N. D.	10/16/68
McIntosh -	754.33	Ashley Tribune, Ashley, N. D.	10/16/68
		Wishek Star, Wishek, N. D.	10/16/68

DEPARTMENT OF THE INTERIOR

Fish and Wildlife Service Regional Information

BUREAU OF SPORT FISHERIES AND WILDLIFE

Slade National Wildlife Refuge
Dawson, North Dakota

NATIONAL WILDLIFE REFUGES TO BE OPEN TO DEER HUNTING

DAWSON -- Long Lake and Slade National Wildlife refuges will again be open to deer gun hunting during the regular season. No other wildlife species may be taken.

Refuge Manager Marvin Mansfield reports that hunters will not be allowed to drive any vehicle on either refuge at any time. In addition, deer will not be hauled out by refuge personnel at either refuge.

Long Lake Refuge extends from east of Moffit to southwest of Steele, and contains a fair to good deer herd. The manager reports the entire refuge is open except for an area in the general vicinity of refuge headquarters. The boundary of this area is posted with "Closed Area" signs.

Slade Refuge is located southeast of Dawson and contains only a fair deer population. It has no closed area except that hunters must stay 40 rods from occupied buildings.

Sent to:
The Bismarck Tribune, Bismarck, No. Dak.
The Steele Ozone, Steele, No. Dak.
The Emmons County Record, Linton, No. Dak.
The Napoleon Homestead, Napoleon, No. Dak.

Ted Schauer is all ready to touch off an Anfo blast at South Marsh.
SL 6-68-6 8/28/68 MM

New tractor in operation preparing tree planting site along west boundary of Slade Refuge. Alvin Hottman operating.
SL 5-68-3 8/1/68 MM

• OCT • 68

JAN • 69

The old Slade Refuge barn was sold to Henry Mueller of Dawson for $ 301.00. He tore it down for the lumber.
SL 6-68-9 9/16/68 MM

More progress on the barn. Mr. Mueller did a nice job of cleaning up the site.
SL 6-68-13 10/1/68 MM

• OCT · 68

• OCT · 68

New fee area sign erected in May at the entrance to the Lake Isabel Recreation Area. Drop box worked pretty good. No fees will be charged in 1969 so these items will be removed.
SL 4-68-17 8/1/68 MM

New boat launching ramp at the Lake Isabel Recreation Area. The ramp was very well accepted and many nice comments were received.
SL 1-68-15 5/22/68 MM

• AUG 68


WELCOME TO A U.S. FEE AREA
UNDER THE LAND AND WATER CONSERVATION
FUND ACT OF 1965 YOU ARE REQUIRED TO
POSSESS A FEDERAL ENTRANCE PERMIT.
AN ANNUAL ENTRANCE PERMIT MAY BE
PURCHASED AT REFUGE HEADQUARTERS.
DAILY PERMITS ARE AVAILABLE AT THIS
DROP BOX.
HAVE A NICE VISIT

JUN • 68 •

Young Swainson's hawks in nest.
SL 4-68-13 7/31/68 GE

Dr. George Johnson of Bismarck, taking pictures of young Swainson's hawks in nest near the Slade Refuge east boundary gate. The hawks (3) were banded by Karl Hansen.
SL 3-68-2 7/18/68 MM

• AUG 68

JAN • 69

A Safety record of 10,000 days without a lost time accident. L. to R. Hottman, Mansfield, Schauer, and Olson.
SL 6-68-10A 10/1/68 MM

Refuge storage shed after shingling roof and painting exterior.
SL 2-68-12 7/18/68 MM

JAN • 69 •

JUL • 68

Hoary bat found sleeping in the shelterbelt at refuge headquarters.
SL 5-68-11 8/6/68 MM

You are an expert if you can guess what this mammal is. Mr. Henry Mueller captured it while farming just north of Tappen. The light mark on the back is a scar from being injured by the farm machinery. Give up? It is a black mutation thirteen-lined ground squirrel. At last report it was doing nicely in the Dakota Zoo in Bismarck.
SL 2-68-4 6/28/68 MM

JAN • 69 •

JUL • 68

Biological Aid Gregory Ericks conducting a water Safety Meeting at Lake Isabel. Victim is "Dick" Mansfield. Others, from left are: Karl Hansen, Doug Moffit, Ted Schauer, Alvin Hottman, Harry Feist, and Gerald Olson.
SL 3-68-1 7/18/68 MM

Gregory Ericks Demonstrates importance of closing nasal air passages before breathing into mouth. Doug Moffit on Right.
SL 3-68-2 7/18/68 MM

• JUL • 68

JAN • 69

The winter goose pen was constructed in Nov. on the edge of the headquarters shelterbelt. Not quite finished but able to hold geese.
SL 6-68-17A 1/9/69 MM

Well established cover on Florence Lake Refuge. Seeding was done in 1962.
LL 17-68-18 8/14/68 KH

JAN • 69

MAR • 69

Sweet clover stand at Florence Lake Refuge.
LL 17-68-3 8/14/68 KH

Ducks (mostly mallards) on the popular south marsh at Florence Lake Refuge.
LL 17-68-19 8/14/68 KH

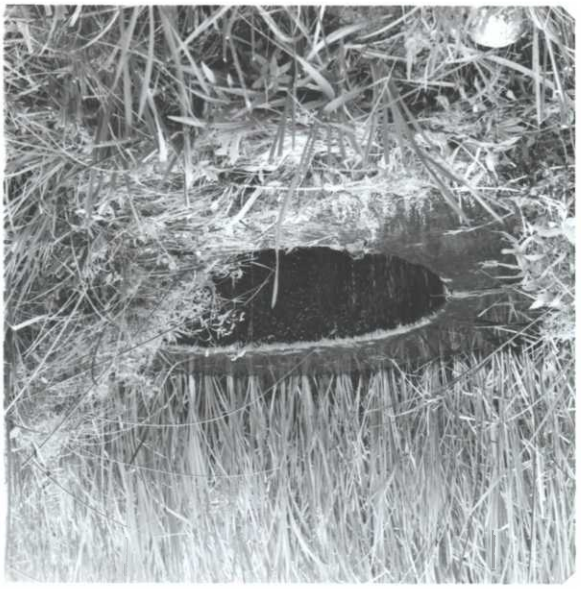
FEB • 69

MAR • 69

Springwater Lake. This is the only water (except in creek) available on the easement refuge. Ducks are rarely observed here, with the most ever recorded being 14 in the fall of 1965.
LL 20-68-3 8/8/68 KH

Drop chute inlet for Springwater Lake.
LL 20-68-2 8/8/68 KH

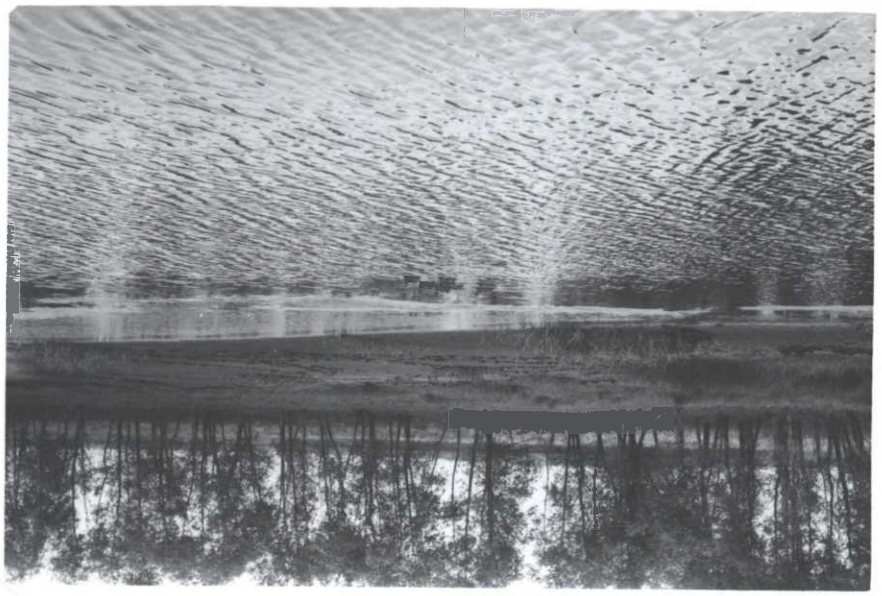
⊙ MAR • 69 •



• 69 • MAR ⊙

Brood of BW teal on Apper Lake Easement Refuge.
LL 17-68-7 8/8/68 KH

• AUG 68



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NARRATIVE REPORT

LONG LAKE NATIONAL WILDLIFE REFUGE

MOFFIT, NORTH DAKOTA

CALENDAR YEAR 1968

I. GENERAL

A. Weather Conditions.

	Snowfall	Precipitation This Month	Normal*		Max. Temp.	Min. Temp.
January	.50	.04	.33		47	-39
February	.20	.02	.25		49	-19
March	6.80	2.12	.34		67	- 6
April	1.50	2.14	1.13		85	13
May	.50	2.41	3.03		84	22
June		5.19	3.62		98	38
July		.63	2.52		95	43
August		2.04	1.91		95	34
September		2.40	1.46		89	30
October		T	.68		81	16
November	1.70	.32	.46		58	5
December	7.10	.53	.24		29	-23
Totals	18.30	17.84	15.97	Ext.	98	-39

*Normal based on January 1952 through December 1965 weather records.

The above weather data were recorded at refuge headquarters.

The first two weeks in January were very cold with the only measurable amount of precipitation for the month falling on the 4th. The last two weeks were comparatively mild and dry. February's temperatures were about average with the .02 precipitation recorded on the 20th.

March temperatures were above normal with a blizzard recorded on the 18th which deposited 1.90" precipitation (rain plus five inches of snow). April was cool with measurable amounts of precipitation recorded on eight days. Early May was cool and damp with the low of 22 recorded on the 20th. Most of the precipitation fell between the 6th and the 11th. June was also cool except for the 98° reading on the 3rd. Precipitation was recorded on 22 days.

July was cool and dry. August was also cool but a near normal amount of precipitation fell. Early September was cool with precipitation recorded throughout the month. October and November temperatures were about normal with the small amount of precipitation falling during the middle of November. Most of December was very cold with precipitation recorded on six occasions.

B. Habitat Conditions.

1. Water.

The water level in Units I and II on January 1, 1968 was 1713.56, or 2.44' and 1.94' respectively below the approved level; The level in Unit III was 1711.80. Unit I peaked at 1715.80 during June, Unit II at 1714.60 during July, and Unit III at 1713.34 during May. Stop logs were replaced in the structure between Units I and II on April 12 and remained until November 1 when they were removed to allow the units to "level-off" before freeze-up. No water was spilled into Unit III from Unit II.

Water levels continued to drop after they peaked during early summer. When the logs were removed on November 1, Unit I was at elevation 1714.68 and Unit II at 1713.84.

End of the period gauge readings from 1964 through 1968 are as follows:

	Unit I	Unit II	Unit III
1964	1714.10	1714.10	Dry
1965	1714.94	1714.94	Dry
1966	1714.60	1714.60	1712.08
1967	1713.56	1713.56	1711.80 (5500 acre pool)
1968	1714.28	1714.28	1711.00
Approved Levels:	1716.00	1715.50	Dry

2. Food and Cover.

Grassland production was excellent. Early rains and cool temperatures caused grasses to produce better than they have for several years. Very good crops of small grains were also produced but corn at the west end of the refuge did not do too well. Since Unit III again contained water, crops in that area were used more heavily by waterfowl.

Just two areas containing corn were "stocked-off" by cattle this year. These were at the east end of the refuge and were harvested in this manner to encourage use by Sandhill cranes.

Unit II is nearly encircled with a band of hardstem bulrush from 25 to 150 feet in width. Sago pondweed beds up to 20 acres in size are common in both Units I and II. The east two to three thousand acres in Unit III supported a good stand of prairie bulrush.

Approximately 85 acres of alfalfa were left untouched this season on agricultural units throughout the refuge.

On March 4, 285 bushels of barley and oats were dumped on the ice along "B" dike for migrant ducks and geese.

II. WILDLIFE

A. Migratory Birds.

1. Waterfowl.

The first mallards and pintails were seen on the 5th of March, the earliest arrival in over 20 years. The first Canada geese were seen a day later, 17 days earlier than 1967. Two white-fronted geese were seen flying over headquarters on March 7th - an unusually early arrival for this species. Blue and snow geese peaked at 185 on March 30. This was considerably less than the 1,400 recorded during the spring migration of 1967.

Table Number 1 compares the peak numbers for various species of waterfowl during the spring migrations of the last two years. Generally, fewer ducks and geese passed through the refuge and surrounding area.

TABLE NUMBER 1

Peak Numbers of Common Waterfowl

Spring Migration

	1967	1968
Species	Peak Numbers	Peak Numbers
Canada geese	2,100	1,085
White-fronted geese	2,200	850
Mallard	5,000	5,250
Gadwall	1,500	1,800
Baldpate	1,750	800
Pintail	7,500	5,230
Blue-winged teal	1,500	1,800
Shoveler	1,500	1,800
Redhead	2,000	2,110
Canvasback	250	150
Lesser scaup	2,000	1,335

By the middle of March 800 geese (mostly Canadas) and 2,300 ducks (mostly mallards and pintails) were present on the refuge. The first redheads, lesser scaup, green-winged teal, gadwall and widgeon were observed on the 16th. Temperatures were in the 40's and 50's, and all snow had disappeared.

On the 18th blizzard conditions prevailed and the refuge received five inches of new snow. Temperatures dipped to -6 on the 19th. A waterfowl count on the 22nd revealed only 200 Canadas, 15 redheads and 1 scaup. The following week brought another waterfowl push and approximately 2,100 geese and 8,500 ducks were counted.

Table Number 2 shows the distribution of arrival dates for the major species of waterfowl compiled over the past 22 years.

TABLE NUMBER 2

Distribution of Arrival Dates for Major Species of Waterfowl

(Numbers represent the number of years first sightings were made)

Species	March						April					Total Years Recorded
	2-6	7-11	12-16	17-21	22-26	27-31	1-5	6-10	11-15	16-20	21-25	
Canada goose	1*		2	1	5		10	3				22
White-fronted**		1*			4	2	4	7	1		1	20
Mallard	1*		2	8	2	4	4	1				22
Pintail	1*	2	2	7	2	4	3	1				22
Gadwall			1*		4	2	7	3	3		2	22
Scaup			1*		3	6	7	2	2		1	22
Baldpate			1*		3	5	5	5	2		1	22
Shoveler					2*	5	10	1	4			22
Redhead			1*		4	5	7	1	3		1	22
Canvasback					2*	3	6	4	4	1	2	22
Blue-wing teal					1			5*	4	7	5	22
Totals	3	3	10	16	32	36	63	33	23	8	13	

* Period sighted 1968
** No record for years 1947 and 1949

The breeding pair count was followed as written in the WIP. Table Number 3 gives the breeding pair count comparison by units for 1967 and 1968. Mallards, pintails, blue-winged teal, and redheads showed a significant decline. Gadwall and shovelers showed a substantial increase.

Unit III had eight miles of shoreline covered during the pair count. The remaining 20 miles (approx.) were not counted. The figures shown in the column for Unit III represent a projected total for the entire unit.

TABLE NUMBER 3

Pair Count Comparisons by Units

Species	Unit I		Unit II		Unit III	
	1967	1968	1967	1968	1967	1968
Mallard	58	57	55	41	290	158
Gadwall	78	62	49	71	242	373
Baldpate	23	13	15	7	80	98
Pintail	56	30	72	43	285	75
B.W. teal	243	265	168	180	550	258
G.W. teal	6	26	13	15	64	60
Shoveler	91	79	64	73	175	298
Total Dabblers	555	532	436	430	1,686	1,320
Redhead	11	21	17	8	40	21
Canvasback	2	7	0	0	0	0
L. scaup	1	9	2	0	3	2
Ruddy	9	1	5	3	7	0
Ringneck	3	0	0	0	0	0
Total Divers	26	38	24	11	50	23
Refuge Total	581	570	460	441	1,736	1,343
Coot	33	50	17	12	42	27

A productivity rate of 40% was used to calculate production. Multiplying this times 2,354 pairs gives 942 broods produced. Multiplying that by 5.5 gives a production figure of 5,181 young. This is the figure used in the NR forms and in the following graphs.

Word has just been received from Biologist Hammond that North Dakota productivity was only about 25%, so the actual production would be 3,234. This figure is not used in the NR forms because they must be submitted in September.

Two brood counts were conducted following procedures written in the wildlife inventory plan. A summary of broods counted is found in Table Number 4.

TABLE NUMBER 4

Brood Summary Table (2 Count)

Species	Brood Count date 7/12, 15, 16 & 22	Brood Count date 8/15-17	Total
Mallard	14	5	19
Gadwall	31	27	58
Baldpate	8	1	9
G.W. teal	2	1	3
B.W. teal	30	11	41
Shoveler	7	1	8
Pintail	11	5	16
Unid. dabblers	4	0	4
Dabblers	107	51	158
Corr. Dabblers	157	86	243
Redhead	2	1	3
Canvasback	1	0	1
Ruddy	0	1	1
Divers	3	2	5
Corr. Divers	8	3	11
Total broods	110	53	163
Corr. broods	165	89	254

Graph Number 1 compares duck and coot production from 1958 to 1968. The years 1962, 1967, and 1968 were good years. This is a direct reflection on the amount of water available in and around the refuge.

Graph Number 2 compares breeding pairs to production for the past six years.

The fall migration of ducks was larger than 1967 with a peak of nearly 29,000. Of this figure, 23,500 were mallards and pintails. The bulk of these were located at two dam-ponds in Unit III and one pond in Unit I.

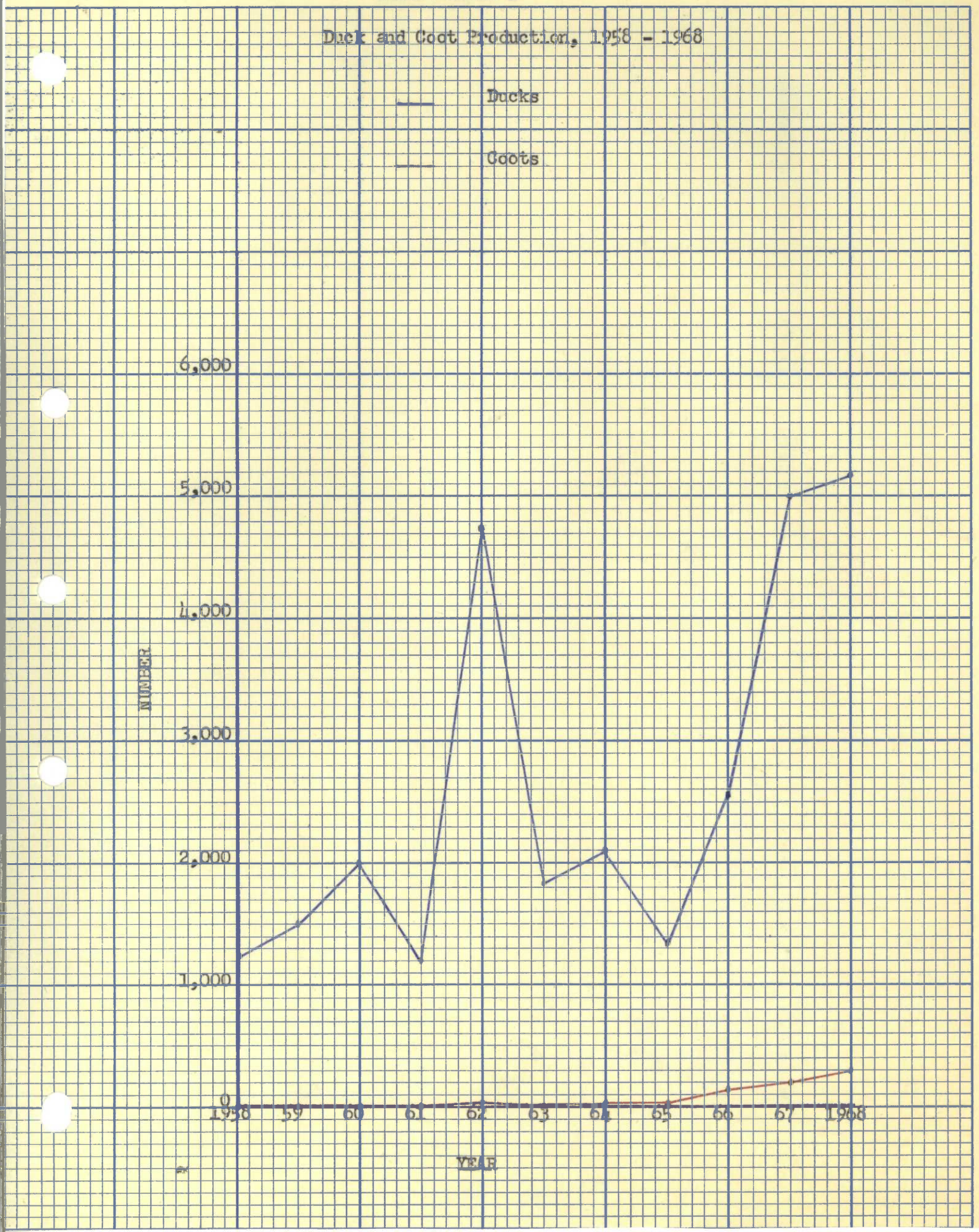
Table Number 5 compares fall peak numbers of waterfowl for 1966-1968, while Graph Number 3 shows a three year comparison of weekly duck populations for the fall period.

Snow and blue geese showed a marked decline for the fall period. White-fronts were more abundant than 1967 but well below 1966. One flock of 40 was seen flying over headquarters on the late date of November 13. Canada geese, both large and small, were more abundant this fall. Graph Number 4 shows the peak fall goose populations for the past nine years.

Whistling swans appeared in good numbers for a five week period beginning the second week in October. The response is probably due to the plentiful supply of sago pondweed in Units I and II. On one weekly survey 113 swans were observed. Of this number, 92 were adults and 21 were juveniles. Among the nine family groups, five families contained three juveniles. Occassionally a pair of adults would be observed with four young.

Table Number 6 shows a five year comparison of use days for waterfowl, coots and Sandhill cranes, while Graph Number 5 compares total waterfowl use days for 1954-1968.

GRAPH NUMBER 1



5181

GRAPH NUMBER 2

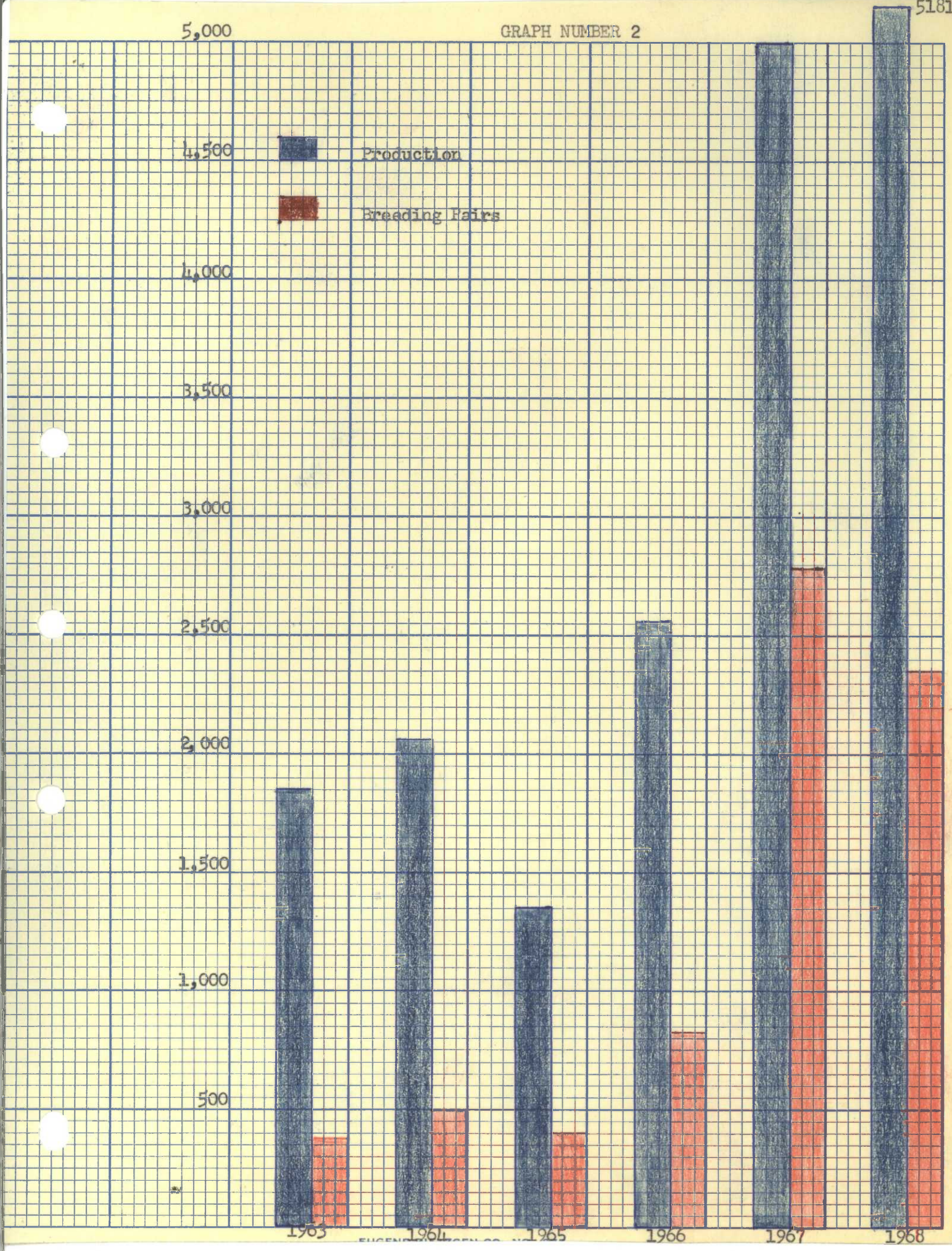


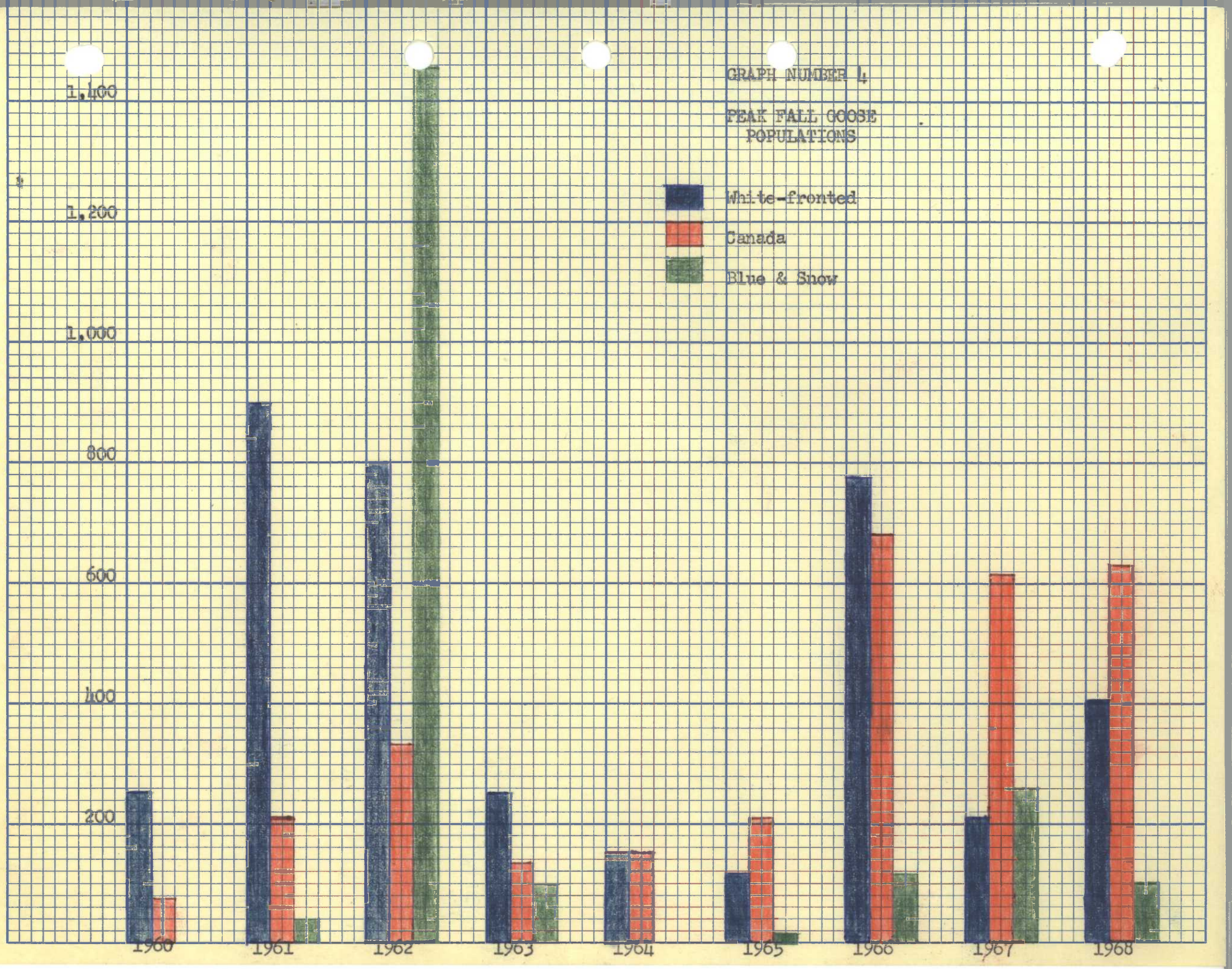
TABLE NUMBER 5

Comparison of Peak Numbers of Waterfowl

September-December, 1966-1968

	Peak Number		
	1966	1967	1968
Whistling swan	157	58	214
Canada geese	675	610	632
White-fronts	770	210	405
Snow & blue	110	260	100
Total Geese	1,555	1,080	1,351
Mallard	15,000	8,000	11,500
Gadwall	3,500	2,500	2,050
Baldpate	800	500	1,000
Pintail	5,000	3,000	11,900
G.W. teal	3,500	2,500	1,800
B.W. teal	1,200	1,200	750
Shoveler	800	1,200	1,850
Total Dabblers	29,800	18,900	30,850
Redhead	500	500	175
Canvasback	400	100	140
Lesser scaup	500	600	1,300
Ruddy	500	200	105
C. merganser	40	250	10
Total Divers	1,940	1,650	1,730
Refuge Total	33,452	21,688	33,931
Coots	1,500	800	650

GRAPH NUMBER 3



EUGENE DIETZGEN CO. NO. 375

TABLE NUMBER 6

Calendar Year Summary

Waterfowl, Coot and Crane Use-Days

	1964	1965	1966	1967	1968
Swans	6,150	2,930	2,618	910	5,401
Geese	11,480	18,000	82,180	199,052	62,888
Ducks	798,090	1,666,360	3,304,175	2,863,429	2,840,286
Coots	46,200	39,970	143,875	134,470	103,810
Cranes	94,570	114,150	138,740	115,716	206,486

Coots were first observed on April 18. This put them about one week earlier than 1967, but their peak was only 800 compared to 1,500 in 1967. Production was estimated at 300.

The peak fall population was the same as the peak spring count. The bulk of them, when they are here, are found on Units I and II. The last small bunch of 20 was seen on November 1.

2. Other Waterbirds.

Sandhill cranes were first observed on March 30, two days later than 1967. A peak of only 150 (compared to 1,000 a year ago) was reached on April 12. No Sandhills nest on Long Lake.

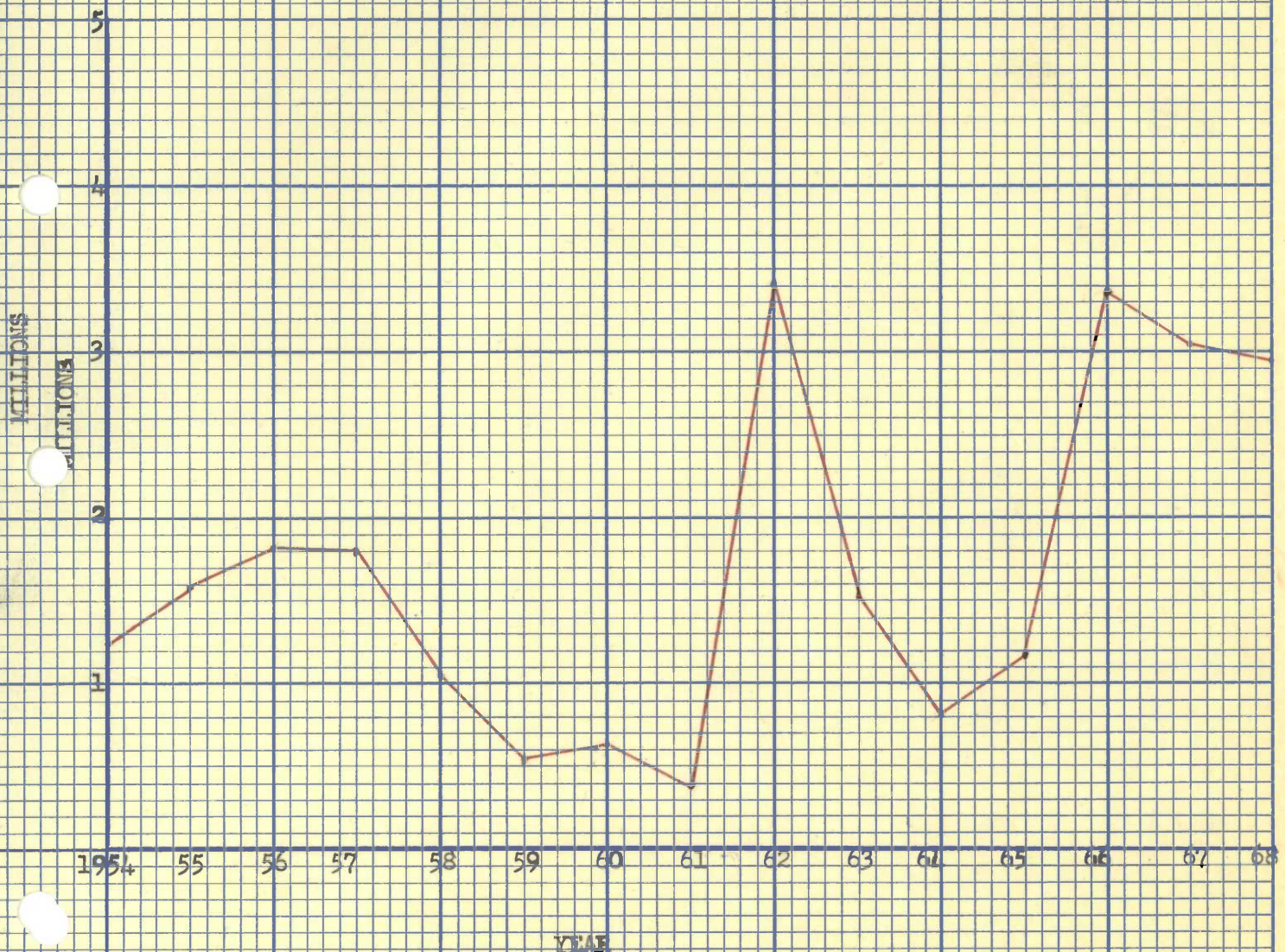
The fall migration was more spectacular with a peak of 5,300 observed on October 25. Only 1963, when 6,000 were recorded, was higher than this year. Graph Number 6 compares their peak fall populations since 1959.

The last Sandhill crane observation for the year was made on November 14, when a flock of 200 was seen flying south over headquarters.

GRAPH NUMBER 5

TOTAL WATERFOWL USE DAYS -- 1954-1968

Calendar Year



EUGENE DIETZGEN CO. NO. 375

THOUSANDS
6
5
4
3
2
1
1968
1967
1966
1965
1964
1963
1962
1961
1960
1959
GRAPH NUMBER 6
SANDHILL CRANE FEAK FALL POPULATIONS

Feeding of Sandhills changed over the previous couple of years. More cranes (up to 1,000) could be seen roosting along the south and east shores of Unit II. These birds were feeding on refuge fields in A-10 and adjacent private grain fields. The bulk of the cranes on the refuge generally confined themselves to Unit III and surrounding grain fields and pastures.

No whooping cranes were seen by refuge personnel this past year. Two reports of sightings were received. One came on April 14, when 5 were reported flying over Unit I near the village of Moffit. On October 6, Mr. Harris Adams (grazing permittee) notified refuge personnel regarding two whooping cranes in the vicinity of G-16 (east end of refuge). A follow up investigation was not productive, but this report is believed to be reliable.

The first grebe observed was a pied-billed on April 9 in Long Lake Creek near the mouth. Western grebes were first seen April 23 and eared grebes May 1. The peak for the three species was 30, 140 and 50 respectively. All three are nesting species. The pied-billed and eared prefer the adjacent marshes and the western nests almost exclusively on Units I and II. The fish populations in the two units provide a plentiful supply of food. Young western grebes were noted on several occasions the latter part of September and into October. No production figures are available.

White pelicans were first seen April 2. A peak of 300 was observed on July 9, and then numbers declined until only 15 - 20 remained throughout the summer and fall. The decrease in their numbers can be attributed partially to a drop in water levels in Unit III and the fact that no water was allowed to flow through the box culvert in "C" dike. The previous year, with water flowing through, a large minnow population built up at the structure, and a peak of 650 pelicans found this to their liking. No pelicans nest on Long Lake.

Double-crested cormorants (2) were first seen April 10 along "B" dike. A dozen birds is about maximum for the refuge throughout the year. No nesting sites are available on the refuge.

Great blue herons, black-crowned night herons and American bitterns were first observed on April 11, 17 and May 16 respectively. Only the latter two nest on the refuge, but in very limited numbers. No nests were located this year. The bay east of headquarters is a favored spot, especially for the night herons.

A snowy egret showed up again this year. It was seen in the roadside ditch on August 3.

Sora and Virginia rails were observed on several occasions. The first sora rail was seen on May 9, and the first Virginia on May 16. Young of both species were seen in the roadside ditches near headquarters. A Virginia rail brood of five was seen on July 12 west of the bridge.

3. Shorebirds, Gulls, and Terns.

Killdeer again led the shorebird migration when one bird was observed March 7 on the north side of Unit III.

Table Number 7 compares arrival dates and estimated peak numbers for a variety of marsh oriented species.

Avocets were by far the most common of the larger shorebirds. Over 2,000 could be seen from the latter part of September through the middle of October on Unit III. This area always attracts a large number due to the huge expanse of shallow water and alkali mud flats. No young avocets or marbled godwits were observed, although several marbled godwit nests were found. On June 14 one willet chick was seen.

Franklin's gulls peaked at 14,500 the middle of September. A common sight was to see wave after wave of these birds coming from surrounding fields near sundown. Most local farmers are happy to see these grasshopper eating birds arrive in their fields. Ring-billed gulls peaked at 1,150 during the first week in October. A few of these birds stay until the last duck has left.

TABLE NUMBER 7

Spring Migration

(Shorebirds, Gulls, Terns and Other Water Birds)

Species	Arrival Date	Peak Number
Killdeer	3/7	300
Herring gull	3/17	50
Ring-billed gull	3/17	1,150
Pelican	4/2	300
Pied-billed grebe	4/9	30
Great blue heron	4/11	25
Franklin's gull	4/12	14,500
Black-crowned night heron	4/17	35
Willet	4/23	100
Piping plover	4/23	10
Baird's sandpiper	4/23	250
Common tern	4/23	300
Western grebe	4/23	140
Lesser yellowlegs	4/24	500
Hudsonian godwit	4/25	30
Wilson's phalarope	4/29	1,000
Long-billed dowitcher	4/30	500
Wilson's snipe	5/1	50
Eared grebe	5/1	50
Upland plover	5/6	100
American bittern	5/6	15
Pectoral sandpiper	5/8	100
Sora rail	5/9	200
Spotted sandpiper	5/10	100
Black tern	5/11	50
Golden plover	5/16	10
Virginia rail	5/16	50
Stilt sandpiper	5/17	100
White-rumped sandpiper	5/27	300
Semi-palmated sandpiper	5/27	400
Dunlin	5/28	25

B. Upland Game Birds.

1. Ring-necked pheasant.

The pheasant population gave no indication of any increase even though the birds experienced a mild winter and good nesting year. Two pheasant broods were observed west of headquarters on August 2. This number of broods matched the number seen the previous year. The bulk of the pheasant population (estimated at 50) use the cattail marshes west of headquarters around the landing strip.

2. Hungarian partridge.

"Huns" appeared more plentiful, and probably came through the relatively mild winter in good shape. Several coveys were observed on or near the refuge throughout the year. Only one brood was sighted. That was on June 23 when 13 recently hatched chicks were observed. Total population is estimated at 175, the same as 1967.

3. Sharp-tailed grouse.

Although the refuge population is estimated at 250 (the same as 1967), there appeared to be an increase in the number of grouse on land around the refuge.

Three dancing grounds, or "leks", were censused in May. Two grounds on the refuge showed four males and three females on one, and eight males and seven females on the other. The one off-refuge ground had 17 males and 15 females. No broods were observed during the year.

Three small patches of corn were planted at headquarters. The grouse came to the Russian olive trees at headquarters during the winter and fed on the berries. The corn will provide additional food - not only for the grouse, but for pheasants and partridges as well.

C. Big Game Animals.

White-tailed deer came through the winter in good shape. A peak of 125 was reported at the end of the year. On January 8, 22 were

observed around the landing strip west of headquarters. On February 1, 46 were counted east of headquarters.

Production was estimated at 60. On September 9, two does with three fawns apiece were observed near the landing strip. On several occasions does with twins were also seen. Graph Number 7 shows the status of the deer herd.

D. Fur Animals, Predators, Rodents and Other Mammals.

Muskrats are becoming a rarity on the refuge. A few animals are seen in Long Lake Creek. A couple at the box culvert on "C" dike and an odd animal in the marsh north of "A" dike. Only one house has been observed in the small marsh next to the "butte". Total population is estimated at 30.

Mink are seen occasionally along all the dikes and Long Lake Creek. Their total population of 30 has not changed over the past year.

Raccoon are seldom seen, but tracks are noted along the dikes and the new corn patches at headquarters were invaded when the corn was young. The refuge population is estimated at 50.

Striped skunk are as common as raccoon. Several were sighted lumbering across refuge roads and trails.

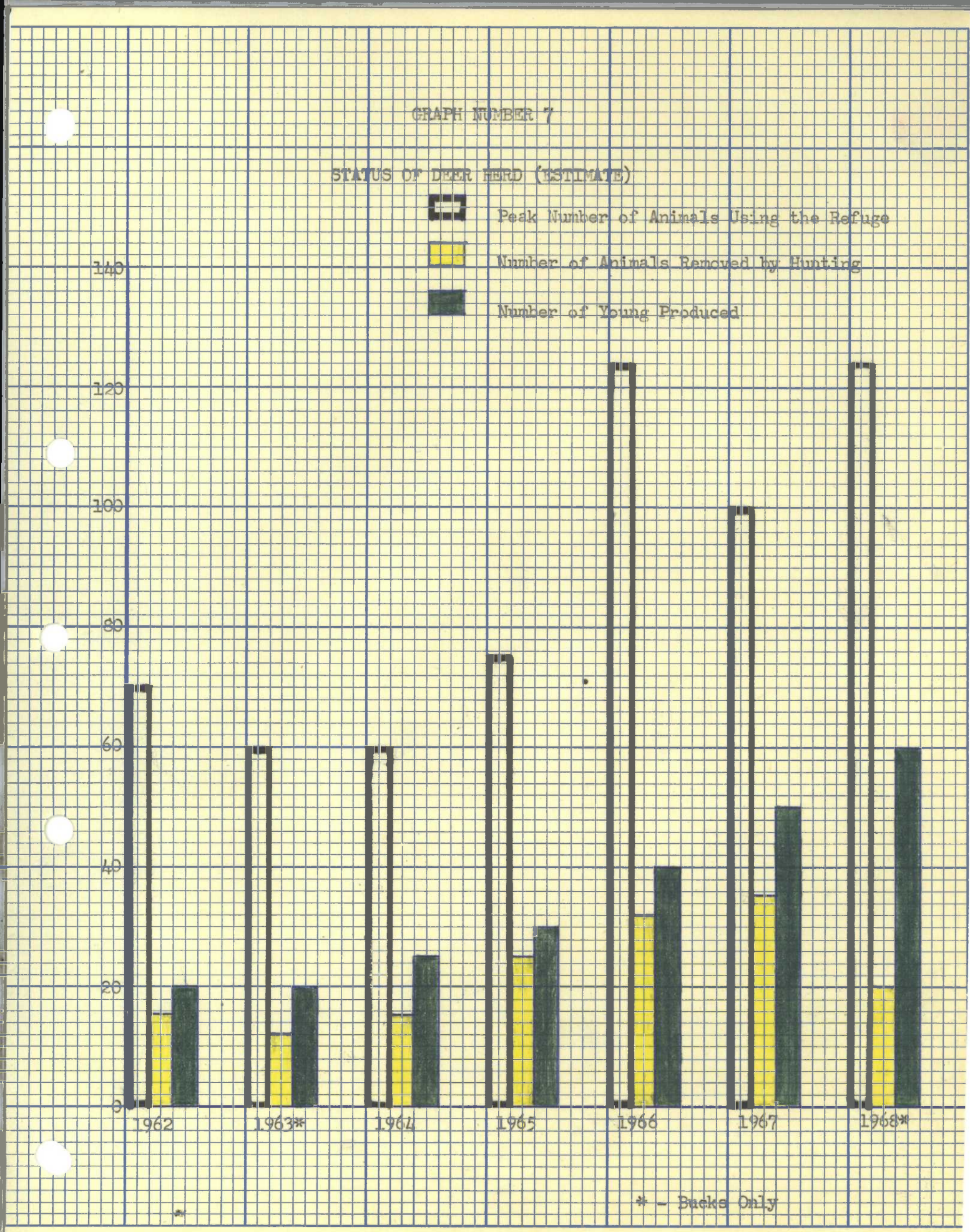
The least, short-tailed and long-tailed weasel are present on the refuge in limited numbers, especially the least. Only sightings of the long-tailed were made this year.

The population of badgers is estimated at 40 animals. A mother and three young were seen crossing the road west of headquarters the first week in September. Occasional sightings were made during routine refuge travels.

Red fox are the reason there "ain't no pheasants left anymore", so say a majority of the "local game managers". No dens were located on the refuge this year. Red fox were seen quite frequently from the first of the year until the grass got tall. Using a predator call as a technique in seeing them at close range was quite rewarding for the assistant manager. On three occasions fox were called within shotgun range.

GRAPH NUMBER 7

STATUS OF DEER HERD (ESTIMATE)



* - Bucks Only

EUGENE DIETZGEN CO. NO. 375

One coyote was observed on the refuge on February 19. The animal was coming out of G-10. Their total numbers remain quite low. No deer hunters reported seeing any while tramping the refuge this past season.

White-tailed jack rabbits appear to be as abundant as last year. Numerous sightings were made on the refuge and surrounding area. Their total population remains at 75.

Richardson's, 13-lined, and Franklin's ground squirrels were seen throughout the year. The Franklin's is the least common, with the 13-lined the most abundant. No estimate is made of their total population. The last ground squirrel, a 13-lined, was observed on November 13.

E. Hawks, Eagles, Owls, Ravens, Crows and Magpies.

No observations were made on the Harlan's hawk or prairie falcon. A peregrine falcon was observed sitting on "B" dike on October 1. Another (or the same) peregrine was seen October 2nd herding a flock of mallards and pintails on the south side of Unit III. The marsh hawk, Swainson's, and red-tailed are most commonly seen.

Bald and golden eagles were again seen this past year in numbers similar to 1967. The first bald eagle was not seen until March 14.

The bald eagles could fly over a flock of ducks sitting on the ice and none would get alarmed. A golden eagle would come within the same distance and bedlam would break out among the ducks. Apparently the golden is much more aggressive.

The first bald eagle observed during fall migration was an adult on October 28. Another adult was seen in the big cottonwood tree at headquarters on November 14.

The first crow was seen March 7. By the last week in March many flocks were seen moving north and northwest across the refuge. No crows are seen during the duck nesting period. Not until the middle of October do the crows start to show up again.

No magpies or ravens were seen on the refuge.

Great-horned owls were seen on several occasions during the year. One nest was located two miles east of Unit II. Only one young was in the nest and it received a band.

In October a great-horned used the top of the flagpole several nights for its perch. Snowy owls were seen again at the beginning of the year. The last one seen in the spring was April 14.

Burrowing owls first arrived April 25. One pair set up house on the John Glovich farm three miles east of headquarters (see photo section). Harry Feist reported burrowing owls have traditionally nested in his pasture for many years. A pair was observed on his farm in June.

A new species of owl was added to the refuge bird list. A saw-whet was seen and photographed in the Russian olive trees behind the office at headquarters on October 14. Short-eared owls were seen at dusk several times in October and November.

F. Other Birds.

The first red-winged blackbirds were seen March 8. Yellow-headed blackbirds never appeared until April 22. Meadowlarks first showed up March 9 and robins on the 15th. Tree sparrows and slate-colored juncos were present on March 7th. A hairy woodpecker was first seen March 12 and an eastern bluebird on March 29.

Mist netting was started again in March to pick up where this new program left off the previous fall. A good banding year was completed by the middle of November. An additional 29 new species were added to the refuge bird list. A total of 2,236 individuals comprising 109 species were banded. (See Section V for banding results).

Other additions to the bird list were made from routine observations. A glaucous gull was observed at headquarters on April 23. A veery was caught in the mist net on June 8, but escaped the holding cage before being banded.

On May 17 a hybrid blue-winged teal-cinnamon teal was observed in the roadside marsh southeast of headquarters.

G. Fish.

Unit III was too low to support anything but some minnows and maybe a few bullheads. Units I and II have a bigger variety due to deeper waters. These units are replenished with a few game fish from Long Lake Creek. However the main fish species are bullheads and carp.

H. Reptiles.

A western smooth green snake was observed at headquarters in August. The only other snake observed was the garter, a common species.

I. Disease.

None.

III. REFUGE DEVELOPMENT AND MAINTENANCE

A. Physical Development.

1. Lakeshore at Headquarters.

Wave action had damaged the fill along the lakeshore at headquarters. 60 cu. yds. of dirt fill was hauled in to repair the damage and 18 cu. yds. of rock rip-rap was placed for protection.

2. Equipment Shed.

Scraped loose paint from all surfaces of metal equipment shed and doors. The doors were re-finished. The primer coat was applied to the roof and painting was started but had to be stopped when cold weather set in.

3. Soil and Moisture.

One mile of new fence was constructed along the lakeshore at Grazing Unit G-19 (east). This unit is now completely enclosed.

A short stretch of fence (.1 mile) was installed in Grazing Unit G-4 to better utilize tame grasses at the north end.

Raised 1/5 mile of road grade at the east end of the refuge for an access road into G-13 and A-1. The old grade had washed out in the early 1950's and had not been repaired. When the adjoining farm was sold, through which we traveled to these units, we were allowed to pass through but via another route which was very long and rough. We would like to have done more work on the grade but the D7 broke down and we found it too expensive to have it repaired.

Repaired spillway in new dam-pond in G-9. Approximately 10 cu. yds. dirt fill placed, 30 cu. yds. of rock and 20 cu. yds. of oversize placed for protection.

5 cu. yds. oversize placed on road-dam at G-19 (west) for additional protection.

Continued cultivation of tree planting sites.

4. Other Development and Maintenance.

Replaced dead evergreens in foundation planting at residence.

Checked and repaired all boundary and interior fences.

Checked boundary posting.

Refinished window sills and frames in residence, and installed new storms on all windows.

Mowed dikes and trails at Slade, Florence Lake, and Long Lake.

Repaired cattle guard in G-7.

Snow removed from courtyard as needed.

Bladed refuge roads and trails as needed.

Mowed lawns and around recognition signs as needed.

Policed picnic and fishing areas.

Routine maintenance and minor repairs were made to the following equipment:

1 - D7 crawler tractor; 1 - 212 Caterpillar motor grader; 2 - farm tractors; 2 - 2½ ton dump trucks; 1 - stake-dump truck; 1 - ½ ton pickup; 1 - sedan delivery; plus assorted miscellaneous equipment.

B. Plantings.

1. Aquatic and Marsh Plants.

None.

2. Trees and Shrubs.

Two Savin juniper, 1 scopulate cedar and 1 Colorado green spruce were purchased for replacement in the headquarters planting.

3. Upland Herbaceous Plants.

None.

4. Cultivated Crops.

Crop yields were good this year throughout the refuge. Rains were general during the growing season and ample enough to produce a good crop. Corn on some of the poorer lands did not do too well.

480 bushels of barley were delivered to refuge bins from the 1968 crop. The balance of the refuge share, 30.2 acres, was left standing in the field. Also left standing were 92.3 acres of corn; of this amount, 46.2 acres were "stocked-off" with cattle until 20% of the crop remained.

183.6 acres of alfalfa were left idle and 5.7 acres were cut for hay by one cooperator.

Cultivated crops this season were as follows:

	Cooperator Share	Refuge Share
Barley	92.7 acres	46.0 acres
Corn	55.1 acres	92.3 acres
Oats	144.3 acres	
Wheat	181.0 acres	

C. Collections and Receipts.

See III. B. 2. above.

D. Control of Vegetation.

See NR-12 - Annual Report of Pesticide Application.

E. Planned Burning.

None.

F. Fires.

None.

IV. RESOURCE MANAGEMENT

A. Grazing.

Twenty grazing units were in use again this season by 18 permittees. The grazing season extended from May 1 through October 15. The early turn-in date was for units supporting tame grasses while the turn-in dates for native grass units were June 1 and June 16. The choice of a four or a five month grazing period was at the discretion of the permittee.

Grasses produced excellent stands this season with plenty of moisture and a cool season. At the end of the period, most units were in very good condition. Grazing on the refuge amounted to a total of 2,309.87 AUM's on 5,172 acres.

B. Haying.

Haying is permitted in one unit at the east end of the refuge in "traditional crane territory". Both tame (brome) and native grasses are removed for hay. This year 32.48 tons of brome and 17.93 tons of wild hay were removed. No other hay was removed from the refuge.

C. Fur Harvest.

None.

D. Timber Removal.

None.

E. Commercial Fishing.

None.

F. Other Uses.

Refund of Federal Excise tax on gasoline was received January 29, 1968 - $10.96.

Sale of surplus property was as follows:

Minneapolis-Moline Tractor	$ 275.00
Irrigation Pump	$ 126.00
1960 Chevrolet Sedan Delivery	$ 132.00
D7 Caterpillar Tractor	$1667.67

V. FIELD INVESTIGATION OR APPLIED RESEARCH

A. Bird Banding.

The mist netting mentioned earlier was beneficial in recording new species for the refuge bird list. The banding was done under a permit held by Dr. George M. Johnson of Bismarck. The bulk of the banding was accomplished by Karl and Barbara Hansen, with nearly all time being donated.

A total of 30 new species were added to the bird list. One of these, a Veery, was caught in the net but escaped before being banded. The Franklin's gulls and common terns were banded at the Foell WPA. This area has a fine nesting colony of eared grebes and black-crowned night herons in addition to the gulls and terns. The great-horned owl was banded about three miles east of refuge headquarters on private land.

The hybrid flicker was definitely a cross between the yellow and red-shafted flickers with plumage characteristics of both. Unusual warbler catches include the Canada, blackburnian, black-throated green, chestnut-sided and Connecticut.

Following is a summary of the birds banded in 1968 by Dr. Johnson and the Hansen's. Most of these were trapped in a mist net.

Species	Number Banded
Swainson's hawk +++	3
Red-tailed hawk	2
Great-horned owl	1
Ring-billed gull	1
Franklin's gull**	5
Common tern**	3
Pied-billed grebe	1
Willet	1
Greater yellowlegs	1
Lesser yellowlegs	1
Spotted sandpiper	3
White-rumped sandpiper*	56
Stilt sandpiper	28
Pectoral sandpiper	4
Semi-palmated sandpiper	28
Least sandpiper	2
Dunlin	2
Killdeer	1
Wilson's phalarope	10
Sora rail	1
Mourning dove	1
Blue jay	3
Hybrid flicker*	1
Yellow-shafted flicker	5
Common grackle	1
Brown-headed cowbird	9
Red-winged blackbird	17
Eastern meadowlark	2
Bobolink	1
Hairy woodpecker	2
Downy woodpecker	4
Yellow-bellied sapsucker*	1
Loggerhead shrike	1
Northern shrike	3
Robin	16
Hermit thrush*	1
Swainson's thrush	18
Gray-cheeked thrush*	16
Brown thrasher	12
Catbird	6
Baltimore oriole	19
Orchard oriole	18
Black-billed cuckoo	1
Scarlet tanager*	1
Eastern kingbird	11
Western kingbird	13
Cedar waxwing	243

Species	Number Banded
Common nighthawk	1
Rose-breasted grosbeak	3
Great-crested flycatcher	1
Olive-sided flycatcher*	1
Traill's flycatcher*	70
Least flycatcher	74
Philadelphia vireo*	5
Warbling vireo*	1
Red-eyed vireo	5
Pine siskin*	5
American goldfinch	179
Redpol	8
Lazuli bunting*	1
Rufous-sided towhee	2
Eastern wood pewee	4
Northern waterthrush	5
Yellow-breasted chat*	1
Ovenbird*	1
Northern yellowthroat	130
Blackpoll warbler	16
Yellow warbler	112
Myrtle warbler	97
Magnolia warbler	14
Tennessee warbler*	27
Orange-crowned warbler	26
Black-throated green warbler*	1
Mourning warbler*	4
Connecticut warbler*	1
Black & white warbler	3
Chestnut-sided warbler*	3
Wilson's warbler*	11
Blackburnian warbler*	1
Canada warbler*	1
American redstart	14
House wren	8
Long-billed marsh wren	19
Ruby-crowned kinlet*	4
Golden-crowned kinglet*	1
Black-capped chickadee	9
Red-breasted nuthatch	2
Brown creeper	1
Bank swallow	2
Cliff swallow	1
Barn swallow	47
Smith's longspur	1
Chestnut-colored longspur	1
Slate-colored junco	24

Species	Number Banded	Species	Number Banded
White-crowned sparrow	7	Tree sparrow	508
White-throated sparrow	17	Clay-colored sparrow	40
Harris' sparrow	10	Chipping sparrow	14
House sparrow	1	Grasshopper sparrow	5
Lincoln's sparrow*	27	Sharp-tailed sparrow	2
Song sparrow	55	Henslow's sparrow*	1
Swamp sparrow*	1	Baird's sparrow*	1
Savannah sparrow	17	Field sparrow*	2
		Total banded	2,236

+++ - banded at Slade refuge
** - banded at Foell WPA
* - new additions to Long Lake bird list

B. Band Returns.

The following returns were received during 1968:

Band No.	Species	Banding Age	Date Banded	Where Recovered	Date Recovered
55699179	Pintail	HY F	8/31/67	Martinez, Texas	10/9/67
58708101	Mallard	AHY F	8/29/67	Arlington, S.D.	10/14/67
55699164	Gadwall	HY M	8/16/65	Loyal, Okla.	11/7/67
57735024	Pintail	HY F	8/29/67	Lake Charles, Louisiana	12/27/67
52559735	BW Teal	HY F	8/23/66	Russell, Iowa	4/20/68

VI. PUBLIC RELATIONS

A. Recreational Uses.

Sport fishing was permitted on the refuge through March 15, May 4 through September 14, and from December 15 through the end of the period. Most fishing occurs during the warmer months and we estimate 690 visits. The fish population is low as it has been for several years. No ice fishing has been done at Long Lake for many years.

For deer-gun hunting on the refuge, see part D. Hunting.

The butte picnic area was used by an estimated 250 persons. The area seems to be gradually getting more use each year. The usual littering headache accompanies its use.

The Driscoll High School, 45 students and teachers, toured the refuge on May 10. Their visit was cut short by rain which later turned to snow.

210 visits were made by persons interested in photography and bird watching.

There is some ice skating activity at the west end of Unit I but the ice usually is too rough or snow covered to permit any extensive use.

B. Refuge Visitors.

See following forms.

C. Refuge Participation.

1/15	Hansen accompanied Manager Mansfield to Jamestown AAO coordination meeting.
3/21	Hansen presented slide-talk to Driscoll School in observance of National Wildlife Week. 55 high school and 60 grade school students.
3/21	Hansen presented slide-talk to Sterling School in observance of National Wildlife Week. 70 grade school students.
3/22	Hansen presented slide-talk to Hazelton School in observance of National Wildlife Week. 195 grade school students.
3/22	Hansen presented slide-talk to Moffit School in observance of National Wildlife Week. 40 grade school students.
3/26	Hansen attended Jamestown AAO coordination meeting.
4/9	Hansen, Olson and Moffit attended and completed defensive driver training course presented by Montana-Dakota Utilities Co. at Bismarck.

OFFICIAL VISITORS LOG

NAME	ORGANIZATION	PURPOSE OF VISIT	DATE ARRIVED	DATE DEPARTED
Jon Nelson	BSFW - Bismarck	Courtesy Call	2/5	2/5
Jon Nelson & Family	Bismarck	Visit	2/18	2/18
G. J. Lang	Farmer - Dawson	Tractor Bid	3/7	3/7
Leo Vetter, Harry and August Feist	Farmers - Moffit	Tractor Bid	3/11	3/11
Wm. Robinson	Rural Mail Carrier - Moffit	Courtesy Call	3/11	3/11
Dave Kemmet	Bismarck	Tractor Bid	3/15	3/15
Wm. G. McClure	USGMA - Bismarck	Check waterfowl populations	3/15	3/15
Dr. George Johnson	Bismarck	Wildlife Photography	3/16	3/16
Myron Schmidt	Leola, S. D.	Tractor Bid	3/28	3/28
Gerald Geisen	Dist. Warden - Linton	Courtesy Call	3/29	3/29
Mr. & Mrs. J. Swanick	Mandan	Bird Watching	3/30	3/30
Local Farmers	Moffit and Driscoll	Spring sign up	4/1	4/1
Local Farmers	Moffit, Driscoll, Braddock	Spring sign up	4/2	4/2
Keith Blessum	ESSA - Fargo	Check weather instruments	4/16	4/16
Jon Nelson	BSFW - Bismarck	Courtesy Call	4/17	4/17

OFFICIAL VISITORS LOG

NAME	ORGANIZATION	PURPOSE OF VISIT	DATE ARRIVED	DATE DEPARTED
Dennis Christopherson	BSFW - Bismarck	Courtesy Call	4/17	4/17
John Winship	R.O. - Minneapolis	Easement check and aerial photos at Long Lake	4/26	4/26
Ernest Renz	Moffit	Pick up sweet clover seed	4/29	4/29
Alfred Riskedahl	Co. Comm. - Steele	Pick up D7 - moved to Slade	4/29	4/29
Jon Nelson	BSFW - Bismarck	Demonstrate fish shocking tech.	5/10	5/10
Dennis Christopherson	" "	" " " "	5/10	5/10
Tom Eichele	Driscoll - Teacher	Refuge Tour	5/10	5/10
Wayne Benz	" "	" "	5/10	5/10
Terry Zender	" "	" "	5/10	5/10
Dr. George Johnson	Bismarck	Bird banding and photography	6/2	6/2
Mike LaLonde	Bismarck	Wildlife photography	6/2	6/2
Paul Robertson	University of Kansas Lawrence, Kansas	Small mammal trapping	6/8	6/8
Mrs. Henry Hansen	May City, Iowa	Visit	6/9	6/19
P. Julian & Family	Boulder, Colo.	Bird watching & visit	6/19	6/19
Dr. George Johnson	Bismarck	Bird watching & visit	6/20	6/20

OFFICIAL VISITORS LOG

NAME	ORGANIZATION	PURPOSE OF VISIT	DATE ARRIVED	DATE DEPARTED
Margo Johnson	New York, New York	Bird watching and visit	6/20	6/20
Wm. Fried	Farmer - Driscoll	Weed control on cropland	6/22	6/22
Elmer Agnew	Farmer - Moffit	Grazing Unit	6/25	6/25
Gerald Geisen	Dist. Warden - Linton	Check protected bird list	6/25	6/25
Merle Dopp	Sibley, Iowa	Pick up manager & family - vacation	6/27	6/27
Wm. Bair	Wildlife Biologist Towner	Botulism check - Unit III	7/16	7/16
Mr. & Mrs. J. Hampson	Mendota, Ill.	Bird watching and photography	7/19	7/19
Mr. & Mrs. Hersom	Fonda, Iowa	Visit	7/21	7/21
P. H. Hansted	Jamestown	Interested in buying old pump	7/21	7/21
Dave Jordan	SCS - Bismarck	Potential dam site	7/22	7/22
Mrs. K. Sather Mrs. O. K. Moore	Round Lake, Minn. Frankfurt, Ind.	Visit	8/1	8/8
James Long	SCS - Bismarck	Tree order for 1969	8/2	8/2
Dr. George Johnson	Bismarck	Mist netting and photography	8/10	8/10
Leo & Mike LaLonde	Bismarck	Photo story and mist netting	8/11	8/11
Dr. Gil Gonzales	Bismarck	Refuge visit	8/15	8/15

OFFICIAL VISITORS LOG

NAME	ORGANIZATION	PURPOSE OF VISIT	DATE	
			ARRIVED	DEPARTED
Dr. Ed Rice	Minneapolis, Minn.	Bird watching and visit	8/15	8/15
Clayton Wolt	Sterling	Deer bow hunting inquiry	8/21	8/21
Lawrence Erhardt	Moffit	Report dead cattle in G-3	9/3	9/3
Olaf Svanes	Braddock	Hay	9/5	9/5
Howard Springsteen	USGS, Rolla, Missouri	Check boundary of Sunburst Ref.	9/5	9/5
James Long	SCS - Bismarck	Visit	9/5	9/5
Dr. George Johnson	Bismarck	Mist netting and photography	9/5	9/5
Earl Eliason	R. O.	Quarters appraisal	9/10	9/10
Dr. Garret and 6 Boy Scouts	Bismarck	Hiking	9/28	9/28
E. Strickland & Son	Bismarck	Duck hunting inquiry	9/29	9/29
Edward Bushby	Portland, Oregon	Sandhill crane photography	10/1	10/1
Dr. E. Moore	Frankfort, Ind.	Hunting trip and visit	10/5	10/10
Orval Moore	" "	" " " "	10/5	10/10
Ray Chapman	" "	" " " "	10/5	10/10
Bob Gale	Bismarck	Duck hunting inquiry	10/12	10/12

OFFICIAL VISITORS LOG

NAME	ORGANIZATION	PURPOSE OF VISIT	DATE	
			ARRIVED	DEPARTED
John Anderson	Bismarck	Duck hunting inquiry	10/12	10/12
Dr. George Johnson	Bismarck	Refuge visit	10/12	10/12
Dr. David Winter	Bismarck	Refuge visit	10/12	10/12
Darby Reed	Bismarck	Goose hunting inquiry	10/12	10/12
Mr.&Mrs. J. Swanick	Mandan	Bird watching	10/13	10/13
Neil McClure	Bismarck	Pick up surplus items	10/29	10/29
Clair Rollings	R.O. - Minneapolis	Inspection - grazing units	11/1	11/1
Ed Schmidt	Hazelton	D7 bid	12/12	12/12
Cal Sorenson	Garrison	D7 bid	12/16	12/16
Dr. George Johnson	Bismarck	Work on bird banding forms	12/19	12/19
Dr. George Johnson	Bismarck	Work on bird banding forms	12/26	12/26

8/18-22 Hansen attended Law Enforcement Training session at Madison, Wisconsin.

9/27 Hansen and Olson accompanied Manager Mansfield to Law Enforcement meeting at Jamestown NPWRC.

Continued contacts with both ASC and SCS offices at Bismarck.

D. Hunting.

As in the past, the only hunting allowed on the refuge was for deer. This year, for the first time since 1963, antlered bucks only could be taken. Hunting pressure appeared to be down slightly. The season extended from noon, November 8 through November 17. An estimated 20 bucks were removed, plus an illegal doe and fawn kill estimated at 5 - 10. Only two illegal kills were found (see violations).

Duck and goose hunting in the area was fair to good, although populations of both were less than a year ago. Hunting pressure seemed to be about the same. No early teal season was held this year because of the kill of other species in previous years.

E. Violations.

On October 1, Assistant Manager Hansen observed a hunter, Joe J. Dorscher, enter about 300 yards into the refuge and attempt to kill a crippled Canada goose. He was apprehended and appeared before U. S. Commissioner Schmidt at Bismarck on November 1. He He was fined $25.00 with court costs of $10.00 for a total of $35.00.

On the opening day of deer season GMA McClure caught two men with illegal deer (no antlers) on the east end of the refuge. Mr. Larr Leier of Minot, North Dakota and Mr. Harold Marsteller of Wahpeton, North Dakota were each fined $25.00 in North Dakota State Court at Steele by Judge J. E. Williams on the same date - November 8.

F. Depredations.

Because of wet weather, harvesting operations were late this season. Several complaints were received concerning depredations by ducks and cranes. Eight hours were spent using scaring devices at a field just north of water Unit I.

G. Safety.

Safety meetings were held at Long Lake and Slade Refuges, usually on alternate months. Subjects covered at Long Lake meetings include:

Fire extinguisher types and how to use them.
ABC's of hand tools.
The Ten Commandments of the Highway and the Driver's Prayer.
Film "Safety Everywhere, All The Time".
Various "Life Line" and Family Safety magazine articles.

Safety accomplishments during the year include:

Extended vent on gasoline supply tank.
Permanent and temporary personnel completed Defensive Driving course at Bismarck.
Checked and re-charged fire extinguishers.

The Safety record as of December 31 stands at 64 calendar days without a "Lost-Time" accident. The record shown in the last Narrative Report was incorrect because of an injury to Clerk Olson on February 6, 1967 which was considered to be not a "Lost-Time" accident. We were advised by the Regional Office that it was, so the record was broken at 1447 days. The actual number of days at the end of 1967 should have been 329.

Assistant Manager Hansen suffered a facial cut and possible bone fracture on October 28 when he inadvertently walked into a clothes-line post. Medical attention was necessary and the accident was classed as lost-time.

VII. OTHER ITEMS

A. Items of Interest.

Assistant Manager Karl Hansen was promoted and transferred to Upper Mississippi Refuge at Savanna, Illinois on November 18. Karl and his family will be missed. They never complained, were always cheerful, and very much interested in wildlife.

Robert Wright arrived on January 7 to replace Karl. Bob is from the Prairie du Chien station of the Upper Mississippi Refuge. Bob, his wife Sally, and seven month old daughter Mary, are pretty well settled in the Long Lake residence. Because of his previous experience Bob will be a valuable asset to the refuge program.

B. Credits.

Clerk Olson wrote sections I, III, IV, VI B and C, and typed and assembled the entire report. Hansen wrote section II and compiled the data on the bird banding. Mansfield wrote sections V, VI A, D, E and F, and VII.

C. Photographs.

A section of photographs taken with Bureau and personal cameras is appended.

SIGNATURE PAGE

Submitted by:

Marvin Mansfield jr
(Signature)

Marvin Mansfield
Refuge Manager

(Title)

Date: _____

Approved, Regional Office:

Date: APR 7 1969

J C Carlson
(Signature)

ASST
Regional Refuge Supervisor

3-1750
Form [illegible]-1
(Rev[illegible]arch 1953)

WATERFOWL

REFUGE Long Lake

MONTHS OF January TO April, 19 68

(1) Species	Weeks of (2) reporting period: 1/1-7	1/8-14	1/15-21	1/22-28	1/29-2/4	2/5-11	2/12-18	2/19-25	2/26-3/4	3/5-11
Swans:										
Whistling										
Trumpeter										
Geese:										
Canada, Large										160
~~Cackling~~ Canada, Small										110
Brant										
White-fronted										2
Snow										
Blue										
Other										
Ducks:										
Mallard										500
Black										
Gadwall										
Baldpate										
Pintail										400
Green-winged teal										
Blue-winged teal										
Cinnamon teal										
Shoveler										
Wood										
Redhead										
Ring-necked										
Canvasback										
Scaup										
Goldeneye (American)										10
Bufflehead										
Ruddy										
Other										
American Merganser										90
Coot:										

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WATERFOWL
(Continuation Sheet)

REFUGE Long Lake MONTHS OF January TO April, 19 68

(1) Species	(2) Weeks of reporting period 3/12-18 (11)	3/19-25 (12)	3/26-4/1 (13)	4/2-8 (14)	4/9-15 (15)	4/16-22 (16)	4/23-29 (17)	(18)	(3) Estimated waterfowl days use	(4) Production Broods: seen	Broods: Estimated total
Swans:											
Whistling				4	46	4	34		476		
Sandhill Cranes					150	75	100		2,275		
Geese:											
Canada, Large	635	200	185	90					10,990		
Canada, Small	150		900	185	225	80	120		12,390		
Brant											
White-fronted	30		850	425	350	150	90		13,279		
Snow			115		20	10	6		1,057		
Blue			70		5	5			560		
Other											
Ducks:											
Mallard	1,100		2,860	5,250	1,800	1,480	1,400		100,730		
Black											
Gadwall	10		250	620	630	1,330	1,600		31,080		
Baldpate	10		160	770	440	775	770		20,475		
Pintail	1,100		4,150	5,230	1,200	1,090	1,060		99,610		
Green-winged teal	10		180	530	1,250	900	670		24,780		
Blue-winged teal					30	165	530		5,075		
Cinnamon teal											
Shoveler			50	100	680	1,030	1,340		22,400		
Wood											
Redhead	40	15	625	2,110	685	840	440		33,285		
Ring-necked			75	260	65	55	105		3,920		
Canvasback			55	150	40	50	20		2,205		
Scaup, Lesser	10		650	1,195	750	1,335	1,660		37,800		
Goldeneye American	10	1	60	110	15				1,477		
Bufflehead			10	35	15	45	20		875		
Ruddy							60		420		
Other American Merganser	30		285	275	20	35	15		5,250		
Coots:						90	450		3,780		

(over)

	(5) Total Days Use	(6) Peak Number	(7) Total Production
Swans	476	46	
Geese	38,276	2,120	
Ducks	389,382	16,360	
Coots	3,780	450	
Sandhill Cranes	2,275	150	

SUMMARY

Principal feeding areas Water Unit III, Unit I and adjacent cropland and SE of headquarters.

Principal nesting areas

Reported by Karl L. Hansen, Refuge Manager

INSTRUCTIONS (See Secs. 7531 through 7534, Wildlife Refuges Field Manual)

(1) Species: In addition to the birds listed on form, other species occurring on refuge during the reporting period should be added in appropriate spaces. Special attention should be given to those species of local and national significance.

(2) Weeks of Reporting Period: Estimated average refuge populations.

(3) Estimated Waterfowl Days Use: Average weekly populations x number of days present for each species.

(4) Production: Estimated number of young produced based on observations and actual counts on representative breeding areas. Brood counts should be made on two or more areas aggregating 10% of the breeding habitat. Estimates having no basis in fact should be omitted.

(5) Total Days Use: A summary of data recorded under (3).

(6) Peak Number: Maximum number of waterfowl present on refuge during any census of reporting period.

(7) Total Production: A summary of data recorded under (4).

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1953

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W[illegible]TERFOWL

REFUGE Long Lake MONTHS OF May TO August, 19 68

(1) Species	Weeks of reporting period (2) 4/30-5/4 (1)	5-11 (2)	12-18 (3)	19-25 (4)	5/26-6/1 (5)	2-8 (6)	9-15 (7)	16-22 (8)	23-29 (9)	6/30-7/6 (10)
Swans:										
Whistling										
Trumpeter										
Geese:										
Canada										
Cackling										
Brant										
White-fronted										
Snow										
Blue										
Other										
Ducks:										
Mallard	1,400	1,200	1,200	1,200	1,200	1,200	1,200	1,200	1,200	1,200
Black										
Gadwall	1,800	1,800	1,800	1,800	1,800	1,800	1,800	1,800	1,800	1,800
Baldpate	800	400	400	400	400	400	400	400	400	400
Pintail	1,000	1,000	800	800	800	800	800	800	800	800
Green-winged teal	800	400	400	400	400	400	400	400	400	400
Blue-winged teal	1,000	1,200	1,800	1,800	1,800	1,800	1,800	1,800	1,800	1,800
Cinnamon teal	1									
Shoveler	1,700	1,800	1,800	1,800	1,800	1,800	1,800	1,800	1,800	1,800
Wood										
Redhead	400	100	100	100	100	100	100	100	100	100
Ring-necked	50	25								
Canvasback	25	25	10	10	10	10	10	10	10	10
Scaup, Lesser	1,000	1,000	500	50	50	50	50	50	50	50
Goldeneye										
Bufflehead	25	10	2							
Ruddy	75	75	100	100	100	100	100	100	100	100
Other, Merganser	2									
Coot:	750	800	800	600	600	600	600	600	600	600

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WATER FOWL
(Continuation Sheet)

REFUCE Long Lake MONTHS OF May TO August, 19 68

(1) Species	(2) Weeks of reporting period: 7/7-7/13 (11)	14-20 (12)	21-27 (13)	7/28-8/3 (14)	4-10 (15)	11-17 (16)	18-24 (17)	25-31 (18)	(3) Estimated waterfowl days use	(4) Production: Broods seen	(4) Production: Estimated total
Swans:											
Whistling											
Sandhill crane							1	7	56		
Geese:											
Canada, Large							4	5	63		
Cackling											
Brant											
White-fronted											
Snow											
Blue											
Other											
Ducks:											
Mallard	1,200	1,200	1,200	1,800	2,000	3,000	4,000	5,075	221,725	19	250
Black											
Gadwall	1,800	1,800	1,800	1,800	1,800	1,500	1,500	1,370	219,570	62	600
Baldpate	400	400	400	400	400	400	400	400	53,200	9	100
Pintail	800	800	800	1,000	1,000	2,800	3,000	4,630	153,510	17	400
Green-winged teal	400	400	400	400	400	500	900	1,245	63,315	4	100
Blue-winged teal	1,800	1,800	1,800	1,800	1,800	1,600	1,400	1,220	208,740	44	750
Cinnamon teal									7		
Shoveler	1,800	1,800	1,800	1,800	1,800	1,600	1,500	1,430	220,010	8	200
Wood											
Redhead	50	50	50	50	50	50	60	80	12,180	4	40
Ring-necked									525		
Canvasback	10	10	10	10	10	20	20	20	1,680	1	10
Scaup	25	25	25	25	25	25	25	25	21,700		
Goldeneye											
Bufflehead									259		
Ruddy	50	50	50	50	50	40	40	40	9,240	1	20
Other Am. Merganser									14		
Coots:	600	600	600	600	600	600	600	570	79,240	38	300

(over)

	(5) Total Days Use	(6) Peak Number	(7) Total Production
Swans	0	0	0
Geese	63	5	0
Ducks	1,185,675	15,535	~~5,866~~ 5,181
Coots	72,240	800	300
Sandhill cranes	56	7	0

SUMMARY

Principal feeding areas Unit III 60%; Unit II - 15%; Unit I - 25%

Principal nesting areas Unit III - 60%; Unit II - 30%; Unit I - 10%

Reported by Karl L. Hansen

INSTRUCTIONS (See Secs. 7531 through 7534, Wildlife Refuges Field Manual)

(1) Species: In addition to the birds listed on form, other species occurring on refuge during the reporting period should be added in appropriate spaces. Special attention should be given to those species of local and national significance.

(2) Weeks of Reporting Period: Estimated average refuge populations.

(3) Estimated Waterfowl Days Use: Average weekly populations x number of days present for each species.

(4) Production: Estimated number of young produced based on observations and actual counts on representative breeding areas. Brood counts should be made on two or more areas aggregating 10% of the breeding habitat. Estimates having no basis in fact should be omitted.

(5) Total Days Use: A summary of data recorded under (3).

(6) Peak Number: Maximum number of waterfowl present on refuge during any census of reporting period.

(7) Total Production: A summary of data recorded under (4).

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WATERFOWL

REFUGE Long Lake MONTHS OF September TO December 19 68

(1) Species	Weeks of reporting period (2) 9/1-7 (1)	9/8-14 (2)	9/15-21 (3)	9/22-28 (4)	9/29-10/5 (5)	10/6-12 (6)	10/13-19 (7)	10/20-26 (8)	10/27-11/2 (9)	11/3-9 (10)
Swans:										
Whistling					27	214	95	113	113	98
~~Trumpeter~~ Sandhill	25	60	625	3,050	4,200	3,400	3,950	5,300	4,800	2,700
Geese: Cranes										
Canada	7	7			10	35	32	10	110	75
~~Cackling~~ Lesser				3	110	300	600	410	425	
Brant										
White-fronted				335	405	200				
Snow				25	80	20	20	1	1	
Blue				5	20	5	5			
Other Ross'				1						
Ducks:										
Mallard	5,890	8,650	8,650	8,750	11,500	7,900	8,500	6,450	6,000	1,050
Black				2	2	3				
Gadwall	1,330	2,050	1,950	1,500	1,600	1,700	800	550	800	
Baldpate	420	475	600	750	1,000	600	550	200	300	10
Pintail	5,500	9,350	9,500	9,500	11,900	6,000	1,650	1,150	600	50
Green-winged teal	1,335	1,800	1,800	1,500	900	500	350	150	175	
Blue-winged teal	750	550	275	125	45	85				
Cinnamon teal										
Shoveler	1,775	1,800	1,750	1,750	1,500	1,600	1,650	1,850	1,300	
Wood										
Redhead	80	105	150	150	150	55	100	170	175	
Ring-necked							10	10	20	
Canvasback	20	15	10	10	140	65	20	20	20	
Scaup, Lesser	25	25	25	50	85	70	260	1,060	1,300	50
Goldeneye, American									20	5
Bufflehead							10	4	25	2
Ruddy	95	100	105	60	100	30				
Other: Hooded Merganser								1	2	
Common Merganser									10	10
Coot:	600	625	650	650	650	500	225	50	20	

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3-1750a
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(Rev. March 1953)

WATERFOWL
(Continuation Sheet)

REFUGE **Long Lake** MONTHS OF **September** TO **December**, 19**68**

(1) Species	(2) Weeks of reporting period: 11/10-16 (11)	11/17-23 (12)	11/24-30 (13)	12/1-6 (14)	(15)	(16)	(17)	(18)	(3) Estimated waterfowl days use	(4) Production: Broods seen	Estimated total
Swans:											
Whistling	15								4,585		
Sandhill Crane	400								204,155		
Geese:											
Canada	250								3,752		
Lesser									12,936		
Brant											
White-fronted									6,580		
Snow									1,029		
Blue									245		
Other Ross'									7		
Ducks:											
Mallard	1,000	2,500	265	750					544,985		
Black									49		
Gadwall									85,960		
Baldpate									34,335		
Pintail	30								386,610		
Green-winged teal	1								59,577		
Blue-winged teal									12,810		
Cinnamon teal											
Shoveler	1								104,832		
Wood											
Redhead									7,945		
Ring-necked									280		
Canvasback									2,240		
Scaup	70								21,140		
Goldeneye	14								273		
Bufflehead									287		
Ruddy									3,430		
Other: Hooded Merganser									21		
Common Merganser	20		25						455		
Coots:									27,790		

(over)

	(5) Total Days Use	(6) Peak Number	(7) Total Production
Swans	4,585	214	
Geese	24,549	657	
Ducks	1,265,229	28,922	
Coots	27,790	650	
Sandhill Cranes	204,155	5,300	

SUMMARY

Principal feeding areas: Unit III - 75%; Unit II - 20%; Unit I - 5%

Principal nesting areas:

Reported by: Karl L. Hansen, Refuge Manager

INSTRUCTIONS (See Secs. 7531 through 7534, Wildlife Refuges Field Manual)

(1) Species: In addition to the birds listed on form, other species occurring on refuge during the reporting period should be added in appropriate spaces. Special attention should be given to those species of local and national significance.

(2) Weeks of Reporting Period: Estimated average refuge populations.

(3) Estimated Waterfowl Days Use: Average weekly populations x number of days present for each species.

(4) Production: Estimated number of young produced based on observations and actual counts on representative breeding areas. Brood counts should be made on two or more areas aggregating 10% of the breeding habitat. Estimates having no basis in fact should be omitted.

(5) Total Days Use: A summary of data recorded under (3).

(6) Peak Number: Maximum number of waterfowl present on refuge during any census of reporting period.

(7) Total Production: A summary of data recorded under (4).

Interior Duplicating Section, Washington, D. C.
1953

3-1751
Form NR-
(Nov. 1945)

MIGRATO BIRDS
(other than waterfowl)

Refuge Long Lake Months of January to April 1968

(1) Species	(2) First Seen		(3) Peak Numbers		(4) Last Seen		(5) Production			(6) Total
Common Name	Number	Date	Number	Date	Number	Date	Number Colonies	Total # Nests	Total Young	Estimated Number
I. Water and Marsh Birds:										
Pelican	1	4/2	100	4/23						100
Pied-billed grebe	1	4/9	20	4/30						25
Double-crested cormorant	2	4/10	12	4/28						15
Great blue heron	2	4/11	2	4/11						6
Black-crowned night heron	2	4/17	10	4/30						15
Western grebe	1	4/23	30	4/30						30
Eared grebe	1	4/30	1	4/30						10
II. Shorebirds, Gulls and Terns:										
Killdeer	1	3/7	150	4/30						150
Herring gull	10	3/17	50	4/25						50
Ring-billed gull	2	3/17	700	4/25						750
FRanklin's gull	1	4/12	1,500	4/30						1,500
*Glaucous gull	1	4/23	1	4/23						1
Marbled godwit	1	4/17	150	4/30						150
Avocet	2	4/22	300	4/30						300
Willet	1	4/23	100	4/30						100
Piping plover	1	4/23	10	4/25						10
Baird's sandpiper	5	4/23	250	4/30						250
Common tern	1	4/23	300	4/30						300
Lesser yellowlegs	1	4/24	200	4/30						200
Hudsonian godwit	1	4/25	30	4/30						30
Wilson's phalarope	40	4/29	90	4/30						100
Long-billed dowitcher	8	4/30	8	4/30						50

(over)

*Addition to refuge list (out of normal range)

(1)	(2)		(3)		(4)		(5)	(6)
III. Doves and Pigeons:								
Mourning dove	1	4/15	150	4/30				150
White-winged dove								
IV. Predaceous Birds:								
Golden eagle	1	1/8	1	3/14				3
Duck hawk								
Horned owl	Resident		10	4/30				10
Magpie								
Raven								
Crow	1	3/7	200	3/29				250
Bald eagle	1	3/14	3	3/28				3
Red-tailed hawk	1	3/19	2	3/30				3
Marsh hawk	1	3/4	15	4/30				15
Sharp-shinned hawk	1	3/27	5	4/30				5
Ferruginous rough-leg hawk	1	3/27	1	4/2				1
Rough-legged hawk	1	3/7	2	3/30				2
Sparrow hawk	1	4/4	6	4/30				6
Snowy owl	1	1/8	1	1/8	1	4/13		1
Burrowing owl	1	4/25	2	4/30				2
Short-eared owl	1	4/25	2	4/30				2
Swainson's hawk	1	4/30	1	4/30				1

Reported by Karl L. Hansen
Refuge Manager

INSTRUCTIONS

(1) Species: Use the correct names as found in the A.O.U. Checklist, 1931 Edition, and list group in A.O.U. order. Avoid general terms as "seagull", "tern", etc. In addition to the birds listed on form, other species occurring on refuge during the reporting period should be added in appropriate spaces. Special attention should be given to those species of local and National significance. Groups: I. Water and Marsh Birds (Gaviiformes to Ciconiiformes and Gruiiformes)
II. Shorebirds, Gulls and Terns (Charadriiformes)
III. Doves and Pigeons (Columbiformes)
IV. Predaceous Birds (Falconiformes, Strigiformes and predaceous Passeriformes)

(2) First Seen: The first refuge record for the species for the season concerned.

(3) Peak Numbers: The greatest number of the species present in a limited interval of time.

(4) Last Seen: The last refuge record for the species during the season concerned.

(5) Production: Estimated number of young produced based on observations and actual counts.

(6) Total: Estimated total number of the species using the refuge during the period concerned.

INT.-DUP. SEC., WASH., D.C.

3-1751
Form NR-
(Nov. 1945)

MIGRATC BIRDS
(other than waterfowl)

Refuge Long Lake Months of May to August 1946

(1) Species	(2) First Seen		(3) Peak Numbers		(4) Last Seen		(5) Production			(6) Total
Common Name	Number	Date	Number	Date	Number	Date	Number Colonies	Total # Nests	Total Young	Estimated Number
I. Water and Marsh Birds:										
White pelican	Present last period		300	7/9	20	Still here				350
Great blue heron	"	" "	25	8/31	15	"				50
Eared grebe	"	" "	90	8/31	25	"				100
Western grebe	"	" "	140	8/31	140	"				150
Pied-billed grebe	"	" "	30	7/15	15	"				50
Double-crested cormorant	"	" "	52	8/7	10	"				55
Black-crowned night heron	"	" "	35	7/9	15	"				50
American bittern	1	5/6	12	8/31	12	" "				50
Snowy egret	1	8/3	1	8/3	1	8/30				1
II. Shorebirds, Gulls and Terns:										
Killdeer	Present last period		300	7/10	50	Still here				350
Marbled godwit	"	" "	150	6/30	25	" "				175
Avocet	"	" "	1,200	8/30	1,200	" "				1,500
Willet	"	" "	90	7/10	10	8/17				75
Lesser yellowlegs	"	" "	400	6/30	200	Still here				500
Greater yellowlegs	"	" "	100	8/30	50	" "				100
Ring-billed gull	"	" "	500	8/30	350	" "				600
Franklin's gull	"	" "	12,000	8/30	12,000	" "				15,000
Long-billed dowitcher	"	" "	1,100	8/30	800	" "				2,000
Short-billed dowitcher	45	5/17	100	8/30	100	" "				150
Wilson's phalarope	Present last period		1,000	6/30	50	" "				1,500
Northern phalarope	500	5/27	500	5/27	300	6/1				500
Spotted sandpiper	2	5/10	100	7/10	100	Still here				100
Golden plover	6	5/16	6	5/16	6	5/16				50
Stilt sandpiper	3	5/17	150	5/30	10	6/1				200

(over)

(1)	(2)	(3)		(4)		(5)	(6)
III. Doves and Pigeons:							
Mourning dove	Present last period	300	7/15	300	Still here		350
White-winged dove							
IV. Predaceous Birds:							
Golden eagle							
Duck hawk							
Horned owl	10 - 15 present throughout the period						
Magpie							
Raven							
Crow							
Marsh hawk	Present last period	25	6/11	20	Still here		25
Swainson's hawk	" " "	30	8/30	20	" "		30
Red-tailed hawk	" " "	5	8/30	5	" "		10
Sparrow hawk	" " "	5	8/30	5	" "		10
Rough-legged hawk	" " "	5	8/30	5	" "		10
Burrowing owl	" " "	10	6/1	5	" "		10
Short-eared owl	1 8/15	10	8/30	10	" "		10

Reported by Karl L. Hansen

INSTRUCTIONS

(1) Species: Use the correct names as found in the A.O.U. Checklist, 1931 Edition, and list group in A.O.U. order. Avoid general terms as "seagull", "tern", etc. In addition to the birds listed on form, other species occurring on refuge during the reporting period should be added in appropriate spaces. Special attention should be given to those species of local and National significance. Groups: I. Water and Marsh Birds (Gaviiformes to Ciconiiformes and Gruiiformes)
II. Shorebirds, Gulls and Terns (Charadriiformes)
III. Doves and Pigeons (Columbiformes)
IV. Predaceous Birds (Falconiformes, Strigiformes and predaceous Passeriformes)

(2) First Seen: The first refuge record for the species for the season concerned.

(3) Peak Numbers: The greatest number of the species present in a limited interval of time.

(4) Last Seen: The last refuge record for the species during the season concerned.

(5) Production: Estimated number of young produced based on observations and actual counts.

(6) Total: Estimated total number of the species using the refuge during the period concerned.

INT.-DUP. SEC., WASH., D.C.

59317

3-1751
Form NR-1
(Nov. 1945)

MIGRATORY BIRDS
(other than waterfowl)

Refuge Long Lake Months of September to December 1938

(1) Species	(2) First Seen		(3) Peak Numbers		(4) Last Seen		(5) Production			(6) Total
Common Name	Number	Date	Number	Date	Number	Date	Number Colonies	Total # Nests	Total Young	Estimated Number
I. Water and Marsh Birds:										
White Pelican	Present last period		15	9/13	2	10/11				20
Great Blue Heron	"	" "	12	10/4	6	10/11				15
Black-crowned night heron	"	" "	15	9/1	1	10/12				15
American bittern	"	" "	15	9/1	1	10/7				15
Double-crested cormorant	"	" "	12	9/6	10	10/4				15
Western grebe	"	" "	70	9/13	2	11/7				75
Eared grebe	"	" "	25	9/1	5	10/5				25
Pied-billed grebe	"	" "	30	9/1	1	10/30				30
Sandhill crane (included on NR-1)										
II. Shorebirds, Gulls and Terns:										
Killdeer	Present last period		100	9/1	2	10/30				150
Marbled godwit	"	" "	50	9/1	5	9/22				50
Avocet	"	" "	2,550	9/20	20	11/2				2,600
Willet	"	" "	25	9/1	1	10/30				30
Lesser yellowlegs	"	" "	500	9/1	1	10/20				500
Greater yellowlegs	15	9/8	25	9/20	1	10/20				30
Upland plover	Present last period		5	9/1	1	9/22				50
Wilson's phalarope	"	" "	20	9/1	15	10/5				100
Spotted sandpiper	"	" "	40	9/20	2	9/22				50
Long-billed dowitcher	"	" "	500	9/13	50	10/11				500
Franklin's gull	"	" "	14,500	9/13	20	10/30				15,000
Ring-billed gull	"	" "	1,150	9/30	500	11/2				1,500
Herring gull	"	" "	5	9/13	1	11/5				10
Common tern	"	" "	100	9/1	2	9/30				100

(over)

(1)	(2)		(3)		(4)		(5)	(6)
III. Doves and Pigeons:								
Mourning dove	Present last period		300	9/1	5	10/24		350
White-winged dove								
IV. Predaceous Birds:								
Golden eagle								
Duck hawk								
Horned owl								
~~Magpie~~ Snowy owl			15-20 present throughout the period					
~~Raven~~ Short-eared owl	1	9/20	20	10/10	Still here			20
Crow								
Prairie falcon	1	9/14	1	9/14	1	9/14		1
Bald eagle	1	10/28						2
Sparrow hawk	2	9/18	10	9/20	10	9/20		10
Sharp-shinned hawk	2	9/18	5	9/18	1	10/4		5
Marsh hawk	Present last period		10	9/18	1	11/14		20
Red-tailed hawk	" " "		1	9/10	1	10/16		5
Rough-legged hawk	" " "		2	9/10	1	10/14		5
Swainson's hawk	" " "		30	9/8	1	10/25		30
* Saw-whet owl	1	10/14	1	10/14	1	10/14		1

Reported by Karl L. Hansen, Ref. Mgr.

*First record for the refuge.

INSTRUCTIONS

(1) Species: Use the correct names as found in the A.O.U. Checklist, 1931 Edition, and list group in A.O.U. order. Avoid general terms as "seagull", "tern", etc. In addition to the birds listed on form, other species occurring on refuge during the reporting period should be added in appropriate spaces. Special attention should be given to those species of local and National significance. Groups: I. Water and Marsh Birds (Gaviiformes to Ciconiiformes and Gruiiformes)
II. Shorebirds, Gulls and Terns (Charadriiformes)
III. Doves and Pigeons (Columbiformes)
IV. Predaceous Birds (Falconiformes, Strigiformes and predaceous Passeriformes)

(2) First Seen: The first refuge record for the species for the season concerned.

(3) Peak Numbers: The greatest number of the species present in a limited interval of time.

(4) Last Seen: The last refuge record for the species during the season concerned.

(5) Production: Estimated number of young produced based on observations and actual counts.

(6) Total: Estimated total number of the species using the refuge during the period concerned.

INT.-DUP. SEC., WASH., D.C.

59317

3-1750b
Form NR-1B
(Rev. Nov. 1957)

UNITED STATES
DEPARTMENT OF THE INTERIOR
FISH AND WILDLIFE SERVICE
BUREAU OF SPORT FISHERIES AND WILDLIFE

CORRECTED COPY

WATERFOWL UTILIZATION OF REFUGE HABITAT

Refuge Long Lake — For 12-month period ending August 31, 1968

Reported by Karl L. Hansen — Title Refuge Manager

(1) Area or Unit Designation	(2) Habitat Type	(2) Habitat Acreage	(3)	(3) Use-days	(4) Breeding Population	(5) Production
UNIT I	Crops	12	Ducks	586,276	1,140	1,254
	Upland	967	Geese	27,748		
	Marsh	146	Swans	509		
	Water	1,569	Coots	42,336	130	78
	Total	2,694	Total	656,869	1,270	1,332
UNIT II	Crops	213	Ducks	351,766	868	955
	Upland	1,458	Geese	6,937		
	Marsh	492	Swans	510		
	Water	2,129	Coots	42,336	170	102
	Total	4,292	Total	401,549	1,038	1,057
UNIT III	Crops	386	Ducks	1,407,064	2,700	2,972
	Upland	4,923	Geese	34,685		
	Marsh	160	Swans	255		
	Water	10,494	Coots	21,168	200	120
	Total	15,963	Total	1,463,172	2,900	3,092
REFUGE TOTALS	Crops	611	Ducks	2,345,106	4,708	5,181
	Upland	7,348	Geese	69,370		
	Marsh	798	Swans	1,274		
	Water	14,192	Coots	105,840	500	300
	Total	22,949	Total	2,521,590	5,208	5,481
UNIT II SANDHILL CRANE	Crops		Ducks			
	Upland		Geese			
	Marsh	Cranes	Swans	20,780		
	Water		Coots			
	Total		Total			
UNIT III SANDHILL CRANE	Crops		Ducks			
	Upland		Geese			
	Marsh	Cranes	Swans	83,121		
	Water		Coots			
	Total		Total			
REFUGE TOTALS SANDHILL CRANE	Crops		Ducks			
	Upland		Geese			
	Marsh	Cranes	Swans	103,901		
	Water		Coots			
	Total		Total			

(over)

INSTRUCTIONS

All tabulated information should be based on the best available techniques for obtaining these data. Estimates having no foundation in fact must be omitted. Refuge grand totals for all categories should be provided in the spaces below the last unit tabulation. Additional forms should be used if the number of units reported upon exceeds the capacity of one page. This report embraces the preceding 12-month period, NOT the fiscal or calendar year, and is submitted annually with the May-August Narrative Report.

(1) **Area or Unit:** A geographical unit which, because of size, terrain characteristics, habitat type and current or anticipated management practices, may be considered an entity apart from other areas in the refuge census pattern. The combined estimated acreages of all units should equal the total refuge area. A detailed map and accompanying verbal description of the habitat types of each unit should be forwarded with the initial report for each refuge, and thereafter need only be submitted to report changes in unit boundaries or their descriptions.

(2) **Habitat:** Crops include all cultivated croplands such as cereals and green forage, planted food patches and agricultural row crops; upland is all uncultivated terrain lying above the plant communities requiring seasonal submergence or a completely saturated soil condition a part of each year, and includes lands whose temporary flooding facilitates use of non-aquatic type foods; marsh extends from the upland community to, but not including, the water type and consists of the relatively stable marginal or shallow-growing emergent vegetation type, including wet meadow and deep marsh; and in the water category are all other water areas inundated most or all of the growing season and extending from the deeper edge of the marsh zone to strictly open-water, embracing such habitat as shallow playa lakes, deep lakes and reservoirs, true shrub and tree swamps, open flowing water and maritime bays, sounds and estuaries. Acreage estimates for all four types should be computed and kept as accurate as possible through reference to available maps supplemented by periodic field observations. The sum of these estimates should equal the area of the entire unit.

(3) **Use-days:** Use-days is computed by multiplying weekly waterfowl population figures by seven, and should agree with information reported on Form MR-1.

(4) **Breeding Population:** An estimate of the total breeding population of each category of birds for each area or unit.

(5) **Production:** Estimated total number of young raised to flight age.

Interior Duplicating Section, Washington, D. C. 27580

3-175?
Form NR-2
(April 1946)

UPLAND GAME BIRDS

Refuge Long Lake Months of January to April, 19 68

(1) Species	(2) Density		(3) Young Produced		(4) Sex Ratio	(5) Removals			(6) Total	(7) Remarks
Common Name	Cover types, total acreage of habitat	Acres per Bird	Number broods obs'v'd.	Estimated Total	Percentage	Hunting	For Re-stocking	For Research	Estimated number using Refuge	Pertinent information not specifically requested. List introductions here.
Ring-necked pheasant	Approx. 6,100 acres of marsh and upland and 800 acres of cropland.	175			Male:Female 40:60				40	Populations determined from observations recorded during routine refuge travels. Winter check of shelterbelts, Ag. units and dancing grounds also used to derive number of birds using the refuge.
Hungarian partridge	Approx. 100 acres of shelterbelts and old farm groves.	45			50:50				150	
Sharp-tailed grouse		30			50:50				225	

INSTRUCTIONS

Form NR-2 - UPLAND GAME BIRDS.*

(1) SPECIES: Use correct common name.

(2) DENSITY: Applies particularly to those species considered in removal programs (public hunts, etc.). Detailed data may be omitted for species occurring in limited numbers. Density to be expressed in acres per animal by cover types. This information is to be prefaced by a statement from the refuge manager as to the number of acres in each cover type found on the refuge; once submitted, this information need not be repeated except as significant changes occur in the area of cover types. Cover types should be detailed enough to furnish the desired information but not so much as to obscure the general picture. Examples: spruce swamp, upland hardwoods, reverting agriculture land, bottomland hardwoods, short grass prairie, etc. Standard type symbols listed in Wildlife Management Series No. 7 should be used where possible. Figures submitted should be based on actual observations and counts on representative sample areas. Survey method used and size of sample area or areas should be indicated under Remarks.

(3) YOUNG PRODUCED: Estimated number of young produced, based upon observations and actual counts in representative breeding habitat.

(4) SEX RATIO: This column applies primarily to wild turkey, pheasants, etc. Include data on other species if available.

(5) REMOVALS: Indicate total number in each category removed during the report period.

(6) TOTAL: Estimated total number using the refuge during the report period. This may include resident birds plus those migrating into the refuge during certain seasons.

(7) REMARKS: Indicate method used to determine population and area covered in survey. Also include other pertinent information not specifically requested.

* Only columns applicable to the period covered should be used.

3-175
Form NR-2
(April 1946)

UPLAND GAME BIRDS

Refuge Lamb Lake Months of May to August, 19 68

* (1) Species	(2) Density		(3) Young Produced		(4) Sex Ratio	(5) Removals			(6) Total	(7) Remarks
Common Name	Cover types, total acreage of habitat	Acres per Bird	Number broods obs'v'd.	Estimated Total	Percentage	Hunting	For Re-stocking	For Research	Estimated number using Refuge	Pertinent information not specifically requested. List introductions here.
	Approx. 6,200 acres of marsh and upland and 200 acres of cropland. Also 100 acres of shelterbelts and abandoned farms				Male:Female					Populations and production determined from observations recorded during routine refuge travels.
Ring-necked pheasant		175			40:60				50	
Hungarian partridge		45			50:50				175	
Sharp-tailed grouse		30			50:50				250	

INSTRUCTIONS

Form NR-2 - UPLAND GAME BIRDS.*

(1) SPECIES: Use correct common name.

(2) DENSITY: Applies particularly to those species considered in removal programs (public hunts, etc.). Detailed data may be omitted for species occurring in limited numbers. Density to be expressed in acres per animal by cover types. This information is to be prefaced by a statement from the refuge manager as to the number of acres in each cover type found on the refuge; once submitted, this information need not be repeated except as significant changes occur in the area of cover types. Cover types should be detailed enough to furnish the desired information but not so much as to obscure the general picture. Examples: spruce swamp, upland hardwoods, reverting agriculture land, bottomland hardwoods, short grass prairie, etc. Standard type symbols listed in Wildlife Management Series No. 7 should be used where possible. Figures submitted should be based on actual observations and counts on representative sample areas. Survey method used and size of sample area or areas should be indicated under Remarks.

(3) YOUNG PRODUCED: Estimated number of young produced, based upon observations and actual counts in representative breeding habitat.

(4) SEX RATIO: This column applies primarily to wild turkey, pheasants, etc. Include data on other species if available.

(5) REMOVALS: Indicate total number in each category removed during the report period.

(6) TOTAL: Estimated total number using the refuge during the report period. This may include resident birds plus those migrating into the refuge during certain seasons.

(7) REMARKS: Indicate method used to determine population and area covered in survey. Also include other pertinent information not specifically requested.

* Only columns applicable to the period covered should be used.

3-1752
Form NR-2
(April 1946)

UPLAND GAME BIRDS

Refuge Long Lake Months of September to December, 1968

(1) Species	(2) Density	(3) Young Produced			(4) Sex Ratio	(5) Removals			(6) Total	(7) Remarks
Common Name	Cover types, total acreage of habitat	Acres Per Bird	Number broods observed	Estimated Total	Percentage Male:Female	Hunting	For Re-stocking	For Research	Estimated number using Refuge	Pertinent information not specifically requested. List introductions here.
Ring-necked pheasant		175			40:60				50	Populations determined from observations recorded during routine refuge travels.
Hungarian partridge		45			50:50				175	
Sharp-tailed grouse		30			50:50				250	
	Approx. 6,200 acres of marsh and upland and 800 acres of cropland. Also 100 acres of shelterbelts and abandoned farms.									

INSTRUCTIONS

Form NR-2 - UPLAND GAME BIRDS*

(1) SPECIES: Use correct common name.

(2) DENSITY: Applies particularly to those species considered in removal programs (public hunts,etc.). Detailed data may be omitted for species occurring in limited numbers. Density to be expressed in acres per animal by cover types. This information is to be prefaced by a statement from the refuge manager as to the number of acres in each cover type found on the refuge; once submitted, this information need not be repeated except as significant changes occur in the area of cover types. Cover types should be detailed enough to furnish the desired information but not so much as to obscure the general picture. Examples: spruce swamp, upland hardwoods, reverting agriculture land, bottomland hardwoods, short grass prairie, etc. Standard type symbols listed in Wildlife Management Series No. 7 should be used where possible. Figures submitted should be based on actual observations and counts on representative sample areas. Survey method used and size of sample area or areas should be indicated under Remarks.

(3) YOUNG PRODUCED: Estimated number of young produced, based upon observations and actual counts in representative breeding habitat.

(4) SEX RATIO: This column applies primarily to wild turkey, pheasants, etc. Include data on other species if available.

(5) REMOVALS: Indicate total number in each category removed during the report period.

(6) TOTAL: Estimated total number using the refuge during the report period. This may include resident birds plus those migrating into the refuge during certain seasons.

(7) REMARKS: Indicate method used to determine population and area covered in survey. Also include other pertinent information not specifically requested.

*Only columns applicable to the period covered should be used.

Form NR-3
(June 1945)

BIOLOGICAL REPORT

Refuge Long Lake Calendar Year 1968

* (1) Species	(2) Density	(3) Young Produced	(4) Removals				(5) Losses			(6) Introductions		(7) Estimated Total Refuge Population		(8) Sex Ratio
Common Name	Cover types, total Acreage of Habitat	Number	Hunting	For Re-stocking	Sold	For Research	Predation	Disease	Winter Loss	Number	Source	At period of Greatest use	As of Dec. 31	
White-tailed deer	60		20									125		1 male 7 female
	Habitat	Acres												
	Upland and Marsh	6,200												
	Cropland	800												
	Shelterbelts	100												

Remarks:

Reported by Karl L. Hansen

INSTRUCTIONS

Form NR-3 - BIG GAME

(1) SPECIES: Use correct common name; i.e., Mule deer, black-tailed deer, white-tailed deer. It is unnecessary to indicate sub-species such as northern or Louisiana white-tailed deer.

(2) DENSITY: Detailed data may be omitted for species occurring in limited numbers. Density to be expressed in acres per animal by cover types. This information is to be prefaced by a statement from the refuge manager as to the number of acres in each cover type found on the refuge; once submitted, this information need not be repeated except as significant changes occur in the area of cover types. Cover types should be detailed enough to furnish the desired information but not so much as to obscure the general picture. Examples: spruce swamp, upland hardwoods, reverting agriculture land, bottomland hardwoods, short grass prairie, etc. Standard type symbols listed in Wildlife Management Series No. 7 should be used where possible. Figures submitted should be based on actual observations and counts on representative sample areas. Survey method used and size of sample area or areas should be indicated under Remarks.

(3) YOUNG PRODUCED: Estimated total number of young produced on refuge.

(4) REMOVALS: Indicate total number in each category removed during the year.

(5) LOSSES: On the basis of known records or reliable estimates indicate total losses in each category during the year.

(6) INTRODUCTIONS: Indicate the number and refuge or agency from which stock was secured.

(7) TOTAL REFUGE POPULATION: Give the estimated population of <u>each</u> <u>species</u> on the refuge at period of its greatest abundance and also as of Dec. 31.

(8) SEX RATIO: Indicate the percentage of males and females of each species as determined from field observations or through removals.

116008

3-175
Form NR-4
(June 1945)

SMALL MAMMALS

Refuge Long Lake Year ending April 30, 1948

(1) Species	(2) Density		(3) Removals					(4) Disposition of Furs						(5)
								Share Trapping						
Common Name	Cover Types & Total Acreage of Habitat	Acres Per Animal	Hunting	Fur Harvest	Predator Control *	For Re-stocking	For Re-search	Permit Number	Trappers Share	Refuge share	Total Refuge Furs Shipped	Furs Donated	Furs Destroyed	Total Population
Muskrat														30
Mink														30
Raccoon														30
Skunk					2								2	30
Weasel														30
Badger					1								1	40
Red Fox					1								1	45
Coyote														2
Cottontail														10
White-tailed jack rabbit														75

* List removals by Predator Animal Hunter

REMARKS:

Reported by Karl L. Hansen, Refuge Manager

INSTRUCTIONS

Form NR-4 - SMALL MAMMALS (Include data on all species of importance in the management program; i. e., muskrats, beaver, coon, mink, coyote. Data on small rodents may be omitted except for estimated total population of each species considered in control operations.)

(1) SPECIES: Use correct common name. Example: Striped skunk, spotted skunk, short-tailed weasel, gray squirrel, fox squirrel, white-tailed jackrabbit, etc. (Accepted common names in current use are found in the "Field Book of North American Mammals" by H. E. Anthony and the "Manual of the Vertebrate Animals of the Northeastern United States" by David Starr Jordan.)

(2) DENSITY: Applies particularly to those species considered in removal programs. Detailed data may be omitted for species occurring in limited numbers. Density to be expressed in acres per animal by cover types. This information is to be prefaced by a statement from the refuge manager as to the number of acres in each cover type found on the refuge; once submitted, this information need not be repeated except as significant changes occur in the area of cover types. Cover types should be detailed enough to furnish the desired information but not so much as to obscure the general picture. Examples: spruce swamp, upland hardwoods, reverting agriculture land, bottom land hardwoods, short grass prairie, etc. Standard type symbols listed in Wildlife Management Series No. 7 should be used where possible. Figures submitted should be based on actual observations and counts on representative sample areas. Survey method used and size of sample area or areas should be indicated under Remarks.

(3) REMOVALS: Indicate the total number under each category removed since April 30 of the previous year, including any taken on the refuge by Service Predatory Animal Hunter. Also show any removals not falling under headingslisted.

(4) DISPOSITION OF FUR: On share-trapped furs list the permit number, trapper's share, and refuge share. Indicate the number of pelts shipped to market, including furs taken by Service personnel. Total number of pelts of each species destroyed because of unprimeness or damaged condition, and furs donated to institutions or other agencies should be shown in the column provided.

(5) TOTAL POPULATION: Estimated total population of each species reported on as of April 30.

REMARKS: Indicate inventory method(s) used, size of sample area(s), introductions, and any other pertinent information not specifically requested.

32715

3-17
Form NR-5

DISEASE

Refuge Long Lake Year 19 68

Botulism NONE

Period of outbreak _____

Period of heaviest losses _____

Losses:

	Actual Count	Estimated
(a) Waterfowl		
(b) Shorebirds		
(c) Other		

Number Hospitalized	No. Recovered	% Recovered
(a) Waterfowl		
(b) Shorebirds		
(c) Other		

Areas affected (location and approximate acreage) _____

Water conditions (average depth of water in sickness areas, reflooding of exposed flats, etc.

Condition of vegetation and invertebrate life _____

Remarks _____

Lead Poisoning or other Disease NONE

Kind of disease _____

Species affected _____

Number Affected Species	Actual Count	Estimated

Number Recovered _____

Number lost _____

Source of infection _____

Water conditions _____

Food conditions _____

Remarks _____

INT.-DUP., D.C.- 53818-59

3-1757
Form NR-.
(Rev. June 1960)

NONAGRICULTURAL COLLECTIONS, RECEIPTS, AND PLANTINGS (1)

Refuge Long Lake Year 19 68

Species	Collections and Receipts (Seeds, rootstocks, trees, shrubs)						Plantings (Marsh - Aquatic - Upland)						
	Amount (Lbs., bus., etc.)	(2) C or R	Date	Method or Source	Cost	(3) Total Amount on Hand	Location of Area Planted	Rate of Seeding or Planting	Amount Planted (Acres or Yards of Shoreline)	Amount and Nature of Propagules	Date	Survival	Cause of Loss
Savin Juniper	2	R	5/20	Local Nurs.	15.90	None							
Colerado Green Spruce	1	R	5/20	"	15.00	None							
Scopulate Cedar	1	R	5/20	"	15.00	None							
THESE WERE PLANTED AT HEADQUARTERS.													

(1) Report agronomic farm crops on Form NR-8
(2) C = Collections and R = Receipts
(3) Use "S" to denote surplus

Total acreage planted:
Marsh and aquatic _____
Hedgerows, cover patches _____
Food strips, food patches _____
Forest plantings _____

Remarks: _____

76148

3-1758
Form -8
(Rev. Jan. 1956)

Fish and Wildli Service Branch f Wildlife Refuges

CULTIVATED CROPS - HAYING - GRAZING

Refuge **Long Lake** County **Burleigh** State **North Dakota**

Cultivated Crops Grown	Permittee's Share Harvested		Government's Share or Return Harvested		Government's Share or Return Unharvested		Total Acreage Planted	Green Manure, Cover and Waterfowl Browsing Crops Type and Kind	Total Acreage
	Acres	Bu./Tons	Acres	Bu./ Tons	Acres	Bu. /Tons			
Barley	**85.8**	**3,000 bu.**	**6.2**	**250 bu.**	**4.0**	**160 bu.**	**96.0**	**Alfalfa**	**111.8**
Corn					**75.0**	**1,350 bu.**	**75.0**		
Oats	**86.6**	**4,000 bu.**					**86.6**		
Wheat	**115.2**	**2,500 bu.**					**115.2**		
								Fallow Ag. Land.	**None**

No. of Permittees: Agricultural Operations **7** Haying Operations **0** Grazing Operations **13**

Hay - Improved (Specify Kind)	Tons Harvested	Acres	Cash Revenue	Grazing	Number Animals	AUM'S	Cash Revenue	ACREAGE
None				1. Cattle	**617**	**1,739.47**	**4,261.61**	**3,954**
				2. Other	**None**			
				1. Total Refuge Acreage Under Cultivation				**372.8**
Hay - Wild	**None**			2. Acreage Cultivated as Service Operation				**None**

DIRECTIONS FOR PREPARING FORM NR--8'
CULTIVATED CROPS - HAYING - GRAZING

Report Form NR-8 should be prepared on a calendar-year basis for all crops which were planted during the calendar year and for haying and grazing operations carried on during the same period.

Separate reports shall be furnished for Refuge lands in each county when a refuge is located in more than one county or State.

Cultivated Crops Grown - List all crops planted, grown and harvested on the refuge during the reporting period regardless of purpose. Crops in kind which have been planted by more than one permittee or this Service shall be combined for reporting purposes.

Permittee's Share - Only thenumber of acres utilized by the permittee for his own benefit should be shown under the Acres column, and only the number of bushels of farm crops harvested by the permittee for himself should be shown under the Bushels Harvested column. Report all crops harvested in bushels or fractions thereof except such crops as silage, watermelons, cotton, tobacco, and hay, which should be reported in tons or fractions thereof.

Government's Share or Return - Harvested Show the acreage and number of bushels harvested for the Government of crops produced by permittees or refuge personnel. Unharvested Show the exact acreage and the estimated number of bushels of grain available for wildlife. If grazing is made available to waterfowl through the planting of grain, cover, green manure, grazing or hay crops, estimate the tonnage of green food produced or utilized and report under Bushels Unharvesed column.

Total Acreage Planted - Report all acreage planted, including crop failures.

Green Manure, Cover and Waterfowl Grazing Crops Specify the acreage kind and purpose of the crop. These crops and the acreage may be duplicated under cultivated crops if planted during the year, or a duplication may occur under hay if the crop results from a perennial planting.

Hay - Improved - List separately the kinds of improved hay grown. Annual plantings should also be reported under Cultivated Crops, and perennial hay should be listed in the same manner at time of planting

Total Refuge Acreage Under Cultivation Report total land area devoted to agricultural purposes during the year.

3-1758
Form -8
(Rev. Jan. 1956)

Fish and Wildli Service Branch f Wildlife Refuges

CULTIVATED CROPS - HAYING - GRAZING

Refuge **Long Lake** County **Kidder** State **North Dakota**

Cultivated Crops Grown	Permittee's Share Harvested		Government's Share or Return				Total Acreage Planted	Green Manure, Cover and Waterfowl Browsing Crops Type and Kind	Total Acreage
			Harvested		Unharvested				
	Acres	Bu./Tons	Acres	Bu./ Tons	Acres	Bu. /Tons			
Barley	6.9	150 bu.	9.6	230 bu.	26.2	750 bu.	42.7	**Alfalfa**	71.8
Corn	55.1	1,000 bu.			17.3	300 bu.	72.4		
Oats	57.7	3,000 bu.					57.7		
Wheat	65.8	1,500 bu.					65.8		
								Fallow Ag. Land.	7.5

No. of Permittees: Agricultural Operations **5** Haying Operations **2** Grazing Operations **5**

Hay - Improved (Specify Kind)	Tons Harvested	Acres	Cash Revenue	Grazing	Number Animals	AUM'S	Cash Revenue	ACREAGE
Alfalfa	**Est. 20**	5.7	**None***	1. Cattle	**188**	**570.40**	**1,397.49**	**1,218**
Brome	**32.48**	20.0	**129.92**	2. Other	**None**			
***Taken as part of cooperator's share of grain crop.**				1. Total Refuge Acreage Under Cultivation				238.6
Hay - Wild	**17.93**	**Est. 25.0**	**53.79**	2. Acreage Cultivated as Service Operation				**None**

DIRECTIONS FOR PREPARING FORM NR--8'
CULTIVATED CROPS - HAYING - GRAZING

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Total Acreage Planted - Report all acreage planted, including crop failures.

Green Manure, Cover and Waterfowl Grazing Crops. Specify the acreage kind and purpose of the crop. These crops and the acreage may be duplicated under cultivated crops if planted during the year, or a duplication may occur under hay if the crop results from a perennial planting.

Hay - Improved - List separately the kinds of improved hay grown. Annual plantings should also be reported under Cultivated Crops, and perennial hay should be listed in the same manner at time of planting

Total Refuge Acreage Under Cultivation Report total land area devoted to agricultural purposes during the year.

3-1570
NR-8a
(4/54)

REFUGE GRAIN REPORT

Refuge Long Lake Months of January through December, 1968

(1) Variety*	(2) On Hand Beginning of Period	(3) Received During Period	(4) Total	(5) Grain Disposed of				(6) On Hand End of Period	(7) Proposed or Suitable Use*		
				Transferred	Seeded	Fed	Total		Seed	Feed	Surplus
Barley	240	480	720			240	240	480		480	
Oats	50		50			50	50	None			

(8) Indicate shipping or collection points

(9) Grain is stored at Refuge Headquarters, Long Lake Refuge, Moffit, North Dakota

(10) Remarks

*See instructions on back.

REFUGE GRAIN REPORT

This report should cover all grain on hand, received, or disposed of, during the period covered by this narrative report.

Report all grain in bushels. For the purpose of this report the following approximate weights of grain shall be considered equivalent to a bushel: Corn (shelled)—55 lb., corn (ear)—70 lb., wheat—60 lb., barley—50 lb., rye—55 lb., oats—30 lb., soy beans—60 lb., millet—50 lb., cowpeas—60 lb., and mixed—50 lb. In computing volume of granaries, multiply the cubic contents (cu. ft.) by 0.8 bushels.

(1) List each type of grain separately and specifically, as flint corn, yellow dent corn, square deal hybrid corn, garnet wheat, red May wheat, durum wheat, spring wheat, proso millet, combine milo, new era cowpeas, mikado soy beans, etc. Mere listing as corn, wheat, and soybeans will not suffice, as specific details are necessary in considering transfer of seed supplies to other refuges. Include only domestic grains; aquatic and other seeds will be listed on NR–9.

(3) Report all grain received during period from all sources, such as transfer, share cropping, or harvest from food patches.

(4) A total of columns 2 and 3.

(6) Column 4 less column 5.

(7) This is a proposed break-down by varieties of grain listed in column 6. Indicate if grain is suitable for seeding new crops.

(8) Nearest railroad station for shipping and receiving.

(9) Where stored on refuge: "Headquarters granary," etc.

(10) Indicate here the source of grain shipped in, destination of grain transferred, data on condition of grain, unusual uses proposed.

INT.-DEP. SEC., WASH., D.C. 17065

3-1979 (NR-12)
(9/63)

Bureau of Sport Fisheries and Wildlife

ANNUAL REPORT OF PERSTICIDE APPLICATION

Refuge: Long Lake

Proposal Number: 68-1

Reporting Year: 1968

INSTRUCTIONS: Wildlife Refuges Manual, secs. 3252d, 3394b and 3395.

Date(s) of Application	List of Target Pest(s)	Location of Area Treated	Total Acres Treated	Chemical(s) Used	Total Amount of Chemical Applied	Application Rate	Carrier and Rate	Method of Application
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
6/3	Leafy Spurge	G-4 (patches)	1/2	Tordon 22 K	1/4 pt.	.5# per acre	Water 125:1	Hand Sprayer

10. Summary of results (continue on reverse side, if necessary)

Rainfall after application was .05" night of 6/3-4; .66" during the day of June 4.

Results were very good but no doubt new patches will continue to show up as they have for years.

Costs were as follows: $1.00 for material; labor - $9.72; equipment - $1.50: Total Cost - $12.22.

Cost Per Acre: $24.44

35500

THE BISMARCK TRIBUNE

August 14, 1968

A Bird in the Hand Is Worth a Bird Band

Eric Hansen is two and on Sundays he and his dad and mom go bird hunting. His dad, Karl Hansen, is manager of the Wildlife Refuge at Long Lake and in their spare time they tag birds. Eric and Karl put up nets that you can hardly see and the birds don't see them in time and get caught. But that's not so bad because then Karl puts a little numbered bird band on a leg and turns them loose again. They are then official band birds. Tribune Photographer Leo LaLonde went bird hunting, too, Sunday. What he caught is on Page 17.

White-tailed deer at landing strip - Long Lake.

68-1-18 2/3/68 KH

Sharp-tailed grouse feeding on
Russian olives at Headquarters.

68-1-2 2/10/68 KH

FEB • 69

• FEB • 69

New 1968 Chevy replaces 1960 Chevy

68-3-4(Slade) 7/18/68 MM

Dennis Christopherson and Jon Nelson (Fisheries Services - Bismarck) during fish shocking operations in Long Lake Creek. Not too successful as the only fish taken were 2 carp and 1 bullhead.

68-12-13 5/13/68 KH

JAN • 69

JUN • 68

Loading old centrifugal pump - purchased by Mr. Hansted, Jamestown, N. D. for $126.00.

68-18-10 8/25/68 KH

Jon Nelson, District Fisheries Supervisor explaining fish shocking procedures to Driscoll High School students. Demonstration chased indoors by bad weather.

68-11-5 5/10/68 KH

• SEP • 68

JUN 68

Massey-Harris tractor with new
roll bar - Douglas Moffit operator.

68-20-11 9/30/68 KH

Minneapolis-Moline tractor sold as surplus.

68-2-1 3/5/68 KH

• OCT • 68

MAR • 68

Divers feeding along "B" Dike

Personal 4/6/68 KH

Immature northern shrike - tree sparrow - mist net - Hdqtrs. Same shrike caught and banded 1/31/68 using a Baltratri trap with a mouse for bait.

personal 3/4/68 KH

• DEC • 68

DEC • 68

Avocets - Long Lake Refuge

Personal 10/4/68 KH

Regional plane - Landing Strip

Personal 4/26/68 KH

• DEC • 68

DEC • 68

Edward Bushby (Pro Wildlife Photographer)

Personal 10/1/68 KH

Common terns - Franklin's gull

Personal 8/26/68 KH

DEC • 68

• DEC • 68

Western Burrowing Owl

Personal 4/28/68 KH

Canada geese, mallards, pintails - Dam-pond G-9

Personal 3/9/68 KH

• DEC • 68

• DEC • 68

Lesser yellowlegs (left) - greater yellowlegs (right)

Personal 8/17/68 KH

Dr. Gene Garrett & Boys - Troop 14 (Boy Scouts) Bismarck - hiking

L-R: Brian Beattie, Brent Beattie, Brad Zietz, David VanVoorhis, Mark Garrett, Gene Garrett

Personal 9/28/68 KH

• DEC • 68

DEC • 68

Headquarters Area.
Unit II in background.
Buildings face south.
4/26/68 J. Winship

Dam-Pond at G-9.
4/26/68 J. Winship

Whooping Cranes at Unit III.
These two birds visited us for
about a month (mid-April - mid-May 1967).
Photo received too late for last report.

Personal 5/7/67 H. Hosford

Same as previous photo - in flight.

Personal 5/7/67 H. Hosford

A common sight during the fall
migration at Long Lake - Sandhill cranes.

Personal 5/7/67 H. Hosford